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# HISPA BRICK MAGAZINE®



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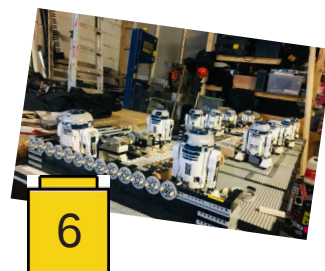
*Luigi Priori*

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# Editorial

by *Lluís Gibert (lluigib)*



It took longer than expected, but finally HispaBrick Magazine® 034 is back. Life changes our priorities, and in this case the birth of my daughter has made my time for the magazine anecdotal. That's the thing about being a first-time parent.

This issue is dedicated to our contributor and friend Luigi Priori. He recently lost his mother and we wanted to give him our affection by publishing on the cover the "Benny's corner" that he made especially for his mother. We send you our deepest sympathy Luigi. Much strength!

We have also experienced the disappearance of Jens Nygaard Knudsen, father (along with his team) of no less than 7.8 billion minifigures. Thanks to him, we have changed the way we play with our bricks, giving the game a human touch. An eternal thank you from all the children and AFOLs of the world. RIP.

As of the previous issue we decided to reduce the number of pages of the magazine, from approximately 100 to about 60. Coordinating 100 pages is complex, and we believe that a 60-page magazine is more manageable for the ever-dwindling editorial team, and more enjoyable for our readers.

We start the year with the new modular, the Chinese New Year sets, the Maneki-neko BrickHeadz (sold out every time it goes on sale) and the new FIAT 500. We will be publishing articles about some of these sets on our blog. In this issue we analyze some of last year's sets, but in a different way than the classic review, since you know the sets very well.

We are waiting to see if our first event of the year can be held. The coronavirus has us on edge, and we see that it is affecting events all over the world, especially in Italy. Let's hope that this "infodemic" alarm ends soon and we can all enjoy meeting other AFOLs and admiring our MOCs and dioramas again.

We thank you for your patience and loyalty to HispaBrick Magazine®. We hope you enjoy this issue. We will try to make sure the next one is not as long in the making as this one :).

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# Interviews

## Star Wars Boost Droid Orchestra: The making of

by HispaBrick Magazine®

Images by Look Mum No Computer



R2-D2 is ready to strike, and so is the R2-D2 right next to him, and the next one... There are 46 of them! Some carry mallets, others are poised to race through tubular bells. On the next table 26 mouse droids are armed with bows which they pull across violins. And right behind them a contingent of 23 Gonk droids punch keys on synthesisers and trigger electronic drums. The Star Wars Droid Orchestra is ready and waiting for their leader and conductor and HispaBrick Magazine® sat down to have a chat with him.

May the 4th is Star Wars day and LEGO® traditionally launches new Star Wars sets. This year one of the big surprises was the Star Wars Boost Droid Commander set.



The first LEGO® Boost set was launched in 2017 with the name Creative Toolkit (#71101). It contains parts to build 5 different models and, in true LEGO® style, the parts are recycled between models, meaning you can build one at a time. It turns out that while that is a great selling point, a considerable proportion of buyers build one mode and basically stick with it. How does LEGO® know that? That's one of the wonders of modern technology. The Boost set requires the use of an app and each time the app connects to the Internet it not only looks for updates but also sends (anonymous) user data about the use of the app. With that in mind LEGO® decided their second Boost set should have models that can be built all together. The only concession to reuse (and price) is the fact that all 3 models - R2-D2, Mouse Droid and Gonk - rely on the use of the same electronics (Boost hub, Boost motor and Colour/Distance sensor).

In order to promote this set in a special way, LEGO® contacted inventor and musician Look Mum No Computer who set about making an orchestra of Droids to play the Star Wars tune.



### Had you ever played with LEGO® before doing this?

Yes. When I was a kid I had quite a bit of LEGO®. I had the first LEGO® MINDSTORMS set (edit: Robotics Invention System, RIS, #9719). I got really nostalgic doing this project and I bought the same box again a couple of weeks ago. I still need to find the cable to connect the IR tower to a computer running Windows 95 - that will be lots of fun! After doing all this Boost stuff I am looking forward to see how "older" it is and how limited in comparison.

One thing the Boost set doesn't allow is for you to upload the commands to the robot. It's OK have to control it from the app when there is only one robot, but when there are lots of robots it becomes a bit of a nightmare.

At one point I was trying to use the colour sensor on the R2D2 droid. I wanted it to stop turning when it saw a red dot. It worked great and it was really cool. The issue that arose was that when it sees the dot it sends some code back to the tablet over bluetooth. That would delay the code by a couple of milliseconds each time and there is no way to quantify exactly how much time that takes on each iteration. That's fine for any other sue, but in this case it caused drift in the program and the sounds wouldn't synch correctly. So I had to go for more simple mechanisms where I knew I always had the exact same delay between pushing the button on the iPad and the droid making the movement to create the sound.

### How did this collaboration start?

I got a phone call out of the blue one day - somebody mentioned to somebody else that I existed - because they were trying to find somebody who could solve a problem like this. They were looking for either an engineering solution or a musical solution, but none of them really intertwined. There are a few people out there who do this kind of thing, but I got the phone call. My first thought was "I get to play with LEGO® for a couple of months!". That sounds like a yes! It was a great excuse to get back into LEGO® because I hadn't touched LEGO® for years, but it all came back to me. Things like the spacing on Technic bricks and all the different quirks of the bricks - all those things that frustrated me so much when I was a kid.



### Did you have a lot of help from LEGO® designers to make the mechanisms?

I went for a meeting once, to see what the droids were like and I had a chance to talk to the developer of the program. I then went back and created all the mechanisms I needed. On the day of the shoot I did have one of the main model designers (edit: Carl Merriam) to help me pair the robots and put them back together if they fell off the table. He knew these robots by heart! I used very simple mechanisms for most of them and they were quite easy to figure out.

### I particularly liked the solution you used on the cellos, which have a revolving drum or wheel to make the string vibrate.

I tried a lot of materials on the LEGO® wheel to figure out what would get the best sound, and amazingly the best solution to make the note was just the plastic.

### What was the most fun part of the project?

Pulling everything apart when the project was finished. Then I started thinking I probably should have taken it apart in such a way that I could put it back together, but I've got all the plans. There are a lot of things I would do differently if I had to do it again, to make it more reliable, so it is good it was just a one-off build and most of the mechanisms are still pretty much in one piece.

The whole project was like walking up a big hill. There were a lot of struggles and then you get to a certain plateau where you say "yes!". I think I got to the first plateau when the droids played the melody in time. I had programmed them all and taken into account all the delays in the movement of the arms. Each arm needs to play a note at a different time and you need to create a different delay for each robot. That was a great day and I was very happy.

### What was the hardest part?

I'd say solving the problems, overall. From the first time chatting about it and seeing the Boost droids to the actual finished thing the hardest part was figuring out the solutions. The violins were particularly difficult. Initially they weren't playing very well. I had to play around with the angles of the bows a lot and putting weights at the end of the bows. I ended up not putting any weights on the bows. For some reason the simplest option worked out the best.

### Did you get to build any of the droids yourself?

Only the ones that I dropped. Thankfully LEGO® sent them assembled, but a lot of them were broken up inside the box so I spent quite some time rebuilding them, but I never built any of them from scratch. It would have driven me mad to build that many. Hopefully one day I will put one together - that's a good point!

With the Gonk droid I was a little worried about having to change the batteries all the time, but it turns out changing the hubs in the droids is actually quite simple once you get the hang of it. Batteries were a concern though. I didn't want to go through tons of batteries so I got a very large amount of rechargeables so now I've got rechargeable batteries everywhere! I had 10 different charging stations so at any one time I had batteries on stand-by and recharging. The battery life in the Boost hubs was very reasonable. At the start of the project I was worried that the bluetooth connections

would drop out, so I set up all the R2-D2 droids I had and connected them to the iPads and went to bed. When I got back the next morning they were all on and still connected to their iPads. So the connectivity is really good and you can get a surprisingly long amount of time with a set of batteries. I thought rechargeables were going to be awful compared to new batteries, but no. If anybody uses Boost I recommend they use 1100mAh rechargeable batteries.

When things get to a certain scale, the most time consuming thing is repeating all of the simple things - setting up, changing batteries etc. The initial idea was to put each robot in a Faraday cage to isolate and pair it. The only way to reliably pair the droids was to do 1 robot, 1 iPad, wait 30 seconds and then on to the next pair. Every single time we needed to start and pair the robots it would take 30 minutes just to start and pair them all.[1]

### **How did you decide on the instruments you would use?**

In the plans there were a lot of different instruments. Until the very last moment, when I ran out of time, there were going to be guitars, but we figured it was probably overkill. The other thing is, I never actually tested the whole machine all at once until we went over to the place where the video was shot because I didn't have enough space. So I had to build one section, put it away to build the next one and kind of imagine them all playing in time. It was quite a nightmare :) But it worked! I've done a similar approach before and nothing was going to go wrong.

In the first iteration LEGO® showed me a presentation with an animation of what they were trying to achieve and it was like an orchestra. There were violins, there were cymbals, and I seem to remember the violin was somehow played by the mouse. I decided to use the xylophones because of the mechanism for those was the first one I thought of and it seemed the easiest one to do. I don't know when the rest of them came about.



### **One of the most interesting solutions you have applied is the Mouse droids shooting arrows at a standing xylophone**

Yes, and they play incredibly quietly! That was a last minute thought because I felt I needed to include more Mouse droids. There weren't enough of them, so I decided to have them shoot at a xylophone. It was in time, but it was very quiet so I had to really boost the microphone on that section.

### **Did you discard any ideas you had?**

Yes, a lot of them. I didn't include the guitar as I mentioned before. There were also going to be a lot more drums but I ended up using the sample pad drummers because for the real drums I couldn't make a mechanism that was quick enough and strong enough to play a drum loud enough. And I would probably have needed a lot more LEGO® to make that happen because I had used all the pieces I had on everything else. U kept on emailing "I need more of these and I need more of those".



### **Did you think about building musical instruments out of LEGO®?**

I did mention the idea, but the LEGO® team I was working with wanted the droids to play actual instruments. Initially the actual idea was that the rest of the mechanisms were not going to be made out of LEGO® - it was all going to be just Droids and instruments. But I am happy I was able to use so much LEGO® in the end.

### **Now that you have built this project using Boost, with the limitation of having to run the programs from iPads, would you consider doing something similar with MINDSTORMS EV3 where you can run the code from the robot itself?**

Yes, I would be very curious to see how that would work. I knew the LEGO® RCX so initially I thought the code would be uploaded to the Boost hub, but Boost is of course aimed at a different market. If it were ever asked I probably would be interested in doing it. I've got quite a bit of LEGO® now so I've just got to figure out what to build. I'm really back into LEGO® building right now - the nostalgia!

### **Are you going to publish the code you use on this project?**

While I built the project I kind of made it up as I was going so documentation isn't my strongest point. I might make a post about the codes, but it's a very silly way of doing it. I told someone how I was doing it and they told me "that's a really stupid way of doing it" :D Because I'm not very good at coding I had these two different pieces of code from previous



projects I did with modular synthesisers. There was one code that turned MIDI into a trigger to lights on and off and there was a thing that received those 5 Volts and turned that into servo movement and I just recycled them. I don't think there is anything else in there that you can't see. The gears and stuff are just the first thing I could think of clicking bricks together and I didn't really build it with robustness in mind - it just had to work.

[1] In the current app you can change the name of your Boost hub. That way, when you have more than 1 hub you can easily choose which one to connect to from the app. That would have simplified things considerably though it would of course still take time to connect all 95 droids!

#





# Visit the LEGO® Store in Shanghai

by Lluís Gibert



In 2018 a new LEGO® store opened in Shanghai. There was already one at Disneyland, but it was far from the city centre. This second store is right next to People's Square in downtown Shanghai.

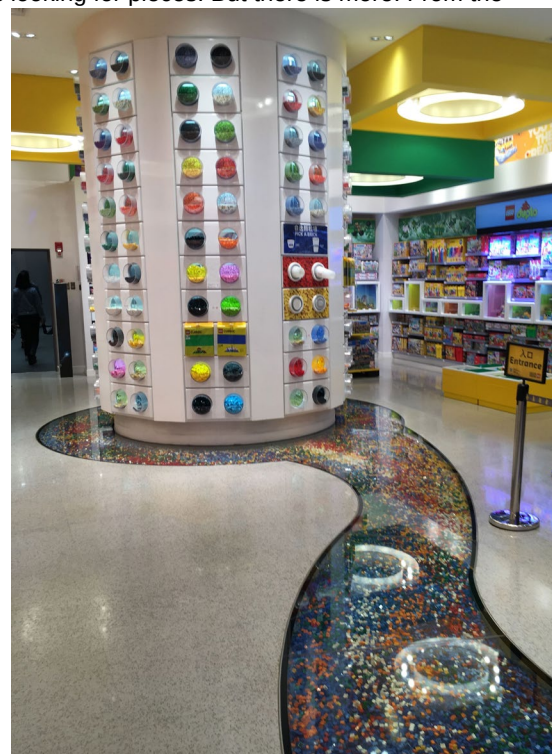
It's easy to locate the store. You walk through EAST NANJING RD and find a giant LEGO® sculpture with "I LOVE SH". Right behind it is the LEGO® store. Being EAST NANJING RD one of the main shopping streets in Shanghai, finding this sculpture, when there is no other commercial reference in the middle of the street is a very positive point for LEGO® and its commercial relations.

Thanks to the Community Manager of China, Jacky Chen was able to give me a guided tour together with Nick, the Store Manager. Although a guided tour of a store may seem a little absurd, Nick explained some concepts that have been applied to the new store for the first time, which will be applied to more stores in the future.

The store has 2 floors, where all the LEGO® lines are distributed. The interesting thing about the store is that the concept connects the two floors in a very original way. Let's start with the fact that instead of the typical wall for the Pick-a-Brick (PaB) there is a column.

Obviously the main function of this PaB column is to supply bricks to avid fans looking for pieces. But there is more. From the floor of the column a kind of river full of pieces, covered by a transparent lid that you can step on, evolves along the tent until it reaches another column in the shape of a tower, from which the tail of an animal made of bricks is born.

When you go up to the top floor, that tail turns into a beautiful dragon. So it is a kind of metaphor, where the dragon is born from the PaB. Very original!





Like in any LEGO® store there are sculptures. In this case, the ground floor features a Rickshaw that you can sit in to take your picture. On the top floor there are several sculptures of famous buildings from all over the world, such as the Statue of Liberty, the Brandenburg Gate, or the Rialto Bridge with Big Ben in the background.

But the decoration of the shop does not end here. There are two more elements that stand out.

In the shop window there is a reproduction of the Eastern Pearl Tower on a miniature scale. The sculpture is colossal and is as high as the two floors of the shop.



On the wall that covers the stairs to the upper floor there is a 3D mosaic that reproduces a commercial street, probably the same one where the shop is located. In addition, some signs have been added that contain the words representing the values of LEGO®.

There are more new concepts, more focused on customers. For example, in the Friends area there are some shelves in the shape of a doll's house. It is useful to be able to do activities in the store that help to decorate it, or to build the sets that have been bought and "test" them in this environment.





There are also some 360-degree immersion bricks in a LEGO® theme. Children (and also some adults) crawl in and in the middle there's a cylinder that you stick your head in and you're surrounded by a set of LEGO® models with a particular theme.

Another novelty is a display case dedicated to showing special or exclusive models that can only be purchased in the store, with digital support made from vertical TV screens that show images and videos of the set being promoted.



There is a play area around a futuristic city, and in which you have to help build models to complete that city.

Since I was there during the first month of the opening of the store, I had the opportunity to buy the exclusive key ring of the store (Limited Series of 10,000 units) and get the precious stamps for my LEGO® passport. In addition, Nick was kind enough to give me the store's exclusive BrickHeadz.

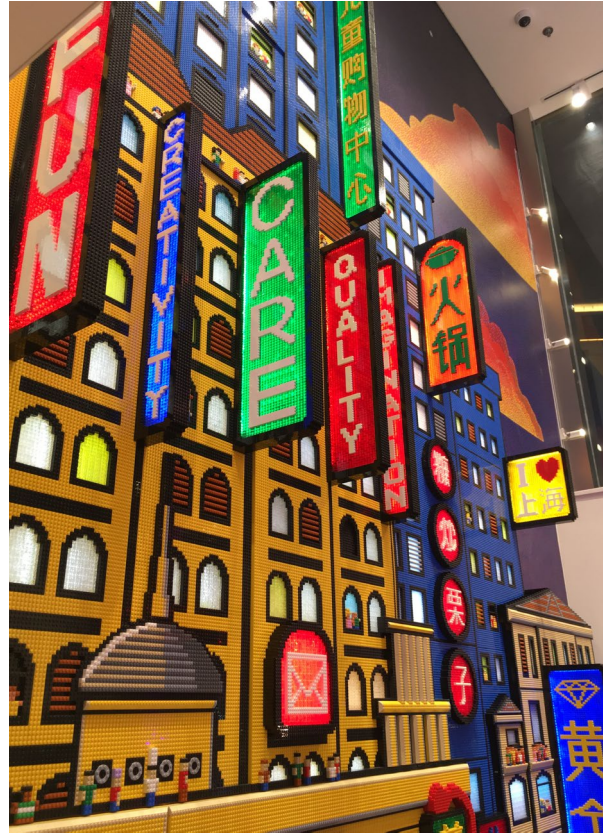
The Shanghai LEGO® Shop - People's Square is a gift for the eyes of any fan. The concepts that have been tried and tested for the first time I think are very successful and give added value to the purely commercial part. The most remarkable thing in my opinion is the PaB column that leads to a beautiful dragon and that is a very well achieved metaphor. If you have the opportunity to go to Shanghai, mark on the itinerary a visit to this LEGO® Store. It's well worth it.

I'd like to thank Jacky Chen and Nick for their kindness and for making the LEGO® Store tour easy for me.

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# Great creators of the world: Antha

by Antha



My name is Antha. In real life I'm a documentary filmmaker; in LEGO®'s life, I mainly like to create and build MOC's.

I've always been searching and in 2015, I looked for LEGO® in the rakes for my niece who I was supporting at the time. By helping her build, I became interested in LEGO® again.

I played a lot when I was a child, well, I don't remember any sets, but mainly building houses of basic shapes and colors and putting in tiles in alternate colors as in checkers. Today, the Tiles are one of the elements that I appreciate the most. While looking for bargains, I also discovered the fabuland range that I didn't know about and that I collected for a while (they now sleep at the bottom of a cupboard) and while looking for information on this subject, I discovered the French forum Brickpirate, which allowed me to discover the world of AFOLS, learn about LEGO® vocabulary and especially meet talented creators. I regularly participate in exhibitions, three a year on average, and am a member of the Lug'Est Association.

I hardly ever build official sets and following instructions bores me. I buy boxes, but it's mainly to increase my stock. However, sometimes I buy and assemble sets from the Architecture or Ideas line which I keep carefully. The first box I bought was the Ideas Birds 21301; I immediately enjoyed this extraordinary set. It is this idea that I like in LEGO®, to make original creations. I bought the Birds box in 2015 and it took me about two years to create a moc that I liked.

Most of my creations are based on a piece whose shape I like. I turn it over and try it out until I find an interesting use for it. Sometimes the process is very fast, other times the pieces stay on my desk for a long time. I spend a lot of time making my creations and often when I'm done, I wait a few days and then pick them up again to try to improve them. I also spend a lot of time thinking about colours and often prefer smooth surfaces.

To find an interesting piece, I have to look for pieces to fall "by chance", go to exhibitions, look in the drawers of the LEGO® Stores in the AFOL days and, above all, look at the creations of MOC creators on the Internet.

It was when I discovered the 18969 hot air balloon which I found elegant and full of possibilities that I really started to make creations that I liked. One of the first MOCs, and still one of my favorites today, is a fragile skiff built from the black version of this piece.

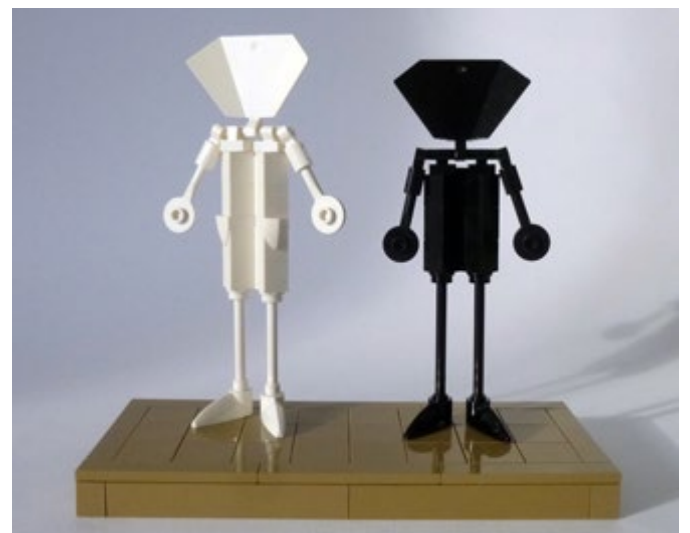
Then I continued working on this piece, I created a light bulb, for example, and then a whole series of characters, one character for each color of the piece. I would like LEGO® to produce the balloon piece in another color, a nice orange or in shades of blue or green.



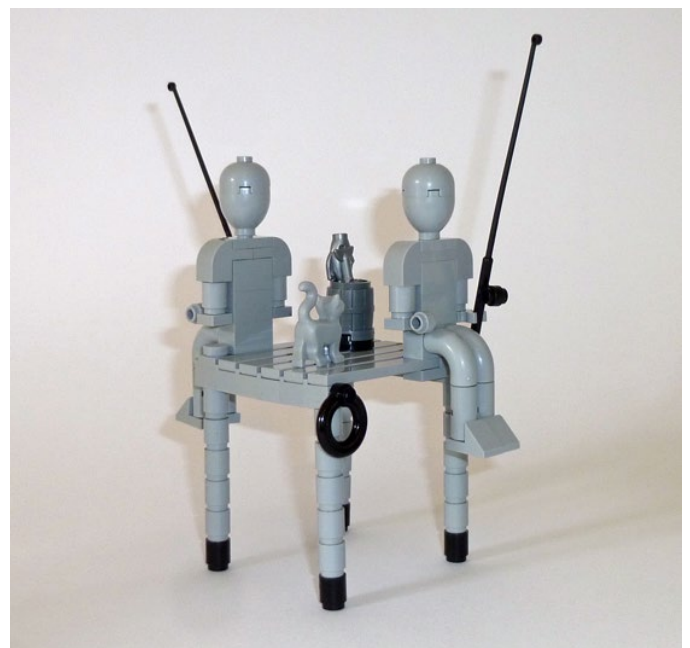




I continued with the theme of the characters: the space panel 30034 made me want to make a small series of miniature size, I continued with the piece clam 18970, the tree trunks Tree Palm Trunk 2536 gave birth to the man of the forest.



When I found the wheel 88517, I immediately thought I needed to balance a character on it; I liked this monochrome character and decided to apply it in other situations. I created the bus stop and then the fishermen. As a game, to respond to those who found the colour grey too sad, I created a colourful version trying to use as many different colours as possible.



Then, I found in bulk the part 57520 Technic Tread Sprocket Wheel Small, I immediately saw a flower and the subject was aesthetically very interesting, I continued on this subject and looked for other technical pieces to create other flowers in the same style.







Sometimes the creation is motivated by the participation in contests. The French brickpirate forum organizes them regularly and when the topics interest me, I try to participate. Although restriction bores me in creation, I appreciate the exercise that forces me to renew myself and break with my habits. Competitions open up new perspectives.

For example, I created a chess board, the theme of the contest was about the seasons; initially, the chess board presented all the colors of the seasons with spring pawns against winter pawns and finally it declined the same scene on each side of the chess board with colors that varied according to the season.

For another contest, I created an extraterrestrial, there the restriction was to make a creation in 20 pieces, a strange plant, it was necessary to make a creation with necessarily one or more miniature arms...



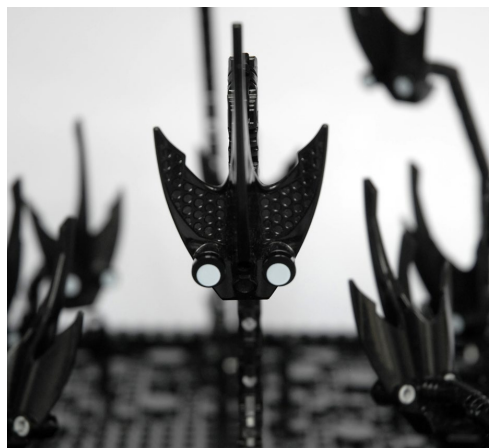


This year I participated in the contest organized by the LEGO® Ideas website “Help decorate the new house”;. I liked the contest because it allowed me to continue with the theme of flowers with the possibility of adding an SF dimension, which forced me to approach the theme of plants from another angle.

For a long time, I wanted to work with pieces from the Duplo range: what interests me above all is their size and power. When I wanted to create the hopscotch, the figures of the Duplo 10847 train were immediately obvious. I looked for a color that would highlight the colors of the duplo and light blue-grey was the obvious choice.



I am currently working on the bionicle Toa Webbed Fin Armor 64296 where I immediately saw a face. The creation is in progress as I write the article. It is a large creation, a first for me.



My latest creation gathers all the ideas that I have mentioned in this article. I discovered by chance in a stall at an exhibition, the bionic fin Toa Webbed Fin Armor 64296.

From the beginning I saw a face there too I created a set of characters, strange creatures that evolved in a universe of the same color, surrounded by spiders, bats, and also black plants. In the center of the creation, I placed a strange and singular being, a flower in pink tones.

All the photos of my creations are available under the name Antha Gallery on my Flickr page: <https://www.flickr.com/photos/62206729@N08/> and on my facebook page: <https://www.facebook.com/Galerie-dAntha-1565300986921785/>  
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# Traditions Revisited: Christmas Cards

*Text and images by Stuck in Plastic*



Back in my childhood days (that was last century) it was a common tradition in my family to write and receive postcards for Christmas. Well, I guess it wasn't just my family but everyone at that time. I remember my parents choosing one afternoon in early December each year to sit down and write Christmas cards to family members and friends, near and far. When technological progress moved on in the nineties, the sheer necessity to write physical cards by hand became obsolete.

First, it was easier to send an SMS. Then emails were even cheaper (and could be decorated with pictures, too). These days many people send an instant message, may it be WhatsApp or Facebook, that you instantly receive on your mobile, suitable for the hectic times we're living in.

We from StuckInPlastic decided at some point that we wanted to try and bring back the tradition of handwritten Christmas cards to share with our friends and followers. In 2019 we successfully ran our third toy photography Xmas card exchange.

The whole thing was as easy as this:

You signed up on our blog. You took a toy photo (festive motif preferred but not obliged). You had your picture printed as a foldable or post card. Wrote a small personal note on it by hand. Sent it to eleven people. Sat down with a hot chocolate/tea/coffee (insert favourite drink here) and waited to receive cards in return.

And as we truly believe in sharing is caring (or shared fortune is double fortune) we added a little extra: each of our 24 participants (who were split into two groups of twelve, in order not having to write too many cards) got to nominate (and thus surprise) a family member/friend/special person who also received 12 postcards from people they didn't even know!

Admittedly it took up some time. Everyone ended up with (at least) 23 cards to write and send. Writing more than 23, e.g. to dear ones from the other group or own friends and family was definitely allowed.



Still, the community's feedback is great and shows that sometimes the old traditions can be very dear:

- "I keep checking my door like 5 times a day waiting for the cards" (@adsdailyphoto)
- "New card from Molly today! Awesome pic, I love it. Thank you so much!" (@sarouxbastoux)
- "My best friend is HAPPY HAPPY HAPPY, she loves these postcards" (@hey.light)
- "Wow Bev, I would just like to say thank you for doing this. I had this morning two envelopes from France and the USA and was very surprised when I opened them. They were postcards with LEGO® photography on them and lovely messages from people who took them. Whatever you did, I'd like to thank you for thinking of me. It's made my day and definitely put a smile on my face" (friend of @bevvpix)
- "My best friend is now like a kid who wants to play too." (@sarouxbastoux)

Whether people kept checking their mailbox day by day or like myself saved them all up for Christmas day, it was all great fun. I'm most sure that in November 2020 we'll get back to our old tradition and a new edition of our Xmas Card Exchange. Maybe you'll join in as well? Or maybe this is a good idea to introduce to your LUG? Either way, happy new year and all the best to you and your loved ones on behalf of [StuckInPlastic.com](http://StuckInPlastic.com)

#





# BRICKERSVILLE

by Patricia Tsoiasue

Brickersville is a youth-serving community of LEGO® enthusiasts and builders that finds its home in Shoreline Village, Long Beach, California. Brickersville provides activities, planning and support for events, as well as classes, summer activities and open design time for visitors to Long Beach and local students.

Brickersville's leadership is a team of four committed enthusiasts: The Honorable First Mayor of Brickersville, Jesse Miller – a LEGO® Serious Play facilitator; Director of Bricking, NZ Fawkes (aged 10) and his mother, Mirium Purewal; and Squigglemom, aka Trish Tsoiasue, community outreach and a facilitator trained in LEGO® Serious Play and Creative Problem Solving.

Brickersville is working to publish a comic book about Shoreline Village and the historic Long Beach Pike and is seeking to create content to be included in the comic book. Brickersville is teaming with Atomic Basement – a Long Beach comic book store, artists community and publishing company (run by Mike Wellman and Anthony Davies) – to create a new art contest: Celebrate!!! We start with Long Beach, California in Summer, 2020.

## CELEBRATE!!! LONG BEACH

This global art contest is an open call for art focused on a specific time and place.

This first contest will focus on picturesque Shoreline Village and the historic Long Beach Pike's role in amusement park history. There will be many different art forms and many different media. My current medium is the LEGO® brick, and we seek to engage all LEGO® enthusiasts. Entries may be mailed in or delivered in-person, and there are special awards for LEGO® creations in every category.

We are hosting LEGO® Serious Play training and special opportunities for trained facilitators to connect with groups to practice their skills.

The purpose of the contest is to engage with those who have visited, know of, or care to learn about the historic Long Beach Pike (between 1902 and 1955) and picturesque Shoreline Village (any years) as they prepare their art entry.

## THE HISTORIC LONG BEACH PIKE

From the late 1880s until 1954, the Long Beach Pike was the major weekend and holiday destination for Los Angelenos (those who live in Los Angeles, CA). At its peak, there were over 200 entertainment attractions at the Pike.

Amusement parks as they exist today did not exist then. In the USA there were just five amusement zones. One of those was in Long Beach. Rides were being invented and built. As I understand it, it was not an organized amusement zone. Different people and groups simply set up their entertainment activities. Folks got together and invented rides, then set them up and operated them.

Here are just a handful of the rides: Bisby's Spiral Airship (one of the first suspended roller coasters); the Cyclone Racer (a 17-hill wooden racing roller coaster); the Sky Ride (a double ferris wheel); and the Bamboo Slide. Plus the circus came to town regularly. So you see, there is much to depict. After Disneyland opened in 1955, traffic to the Pike was significantly reduced and it eventually closed in 1979. It now exists only in photographs, written words and memories. If you are in Long Beach, you can check out the redeveloped Long Beach Pike's tributes to its historic past.

## SHORELINE VILLAGE

For those who prefer to have something they can look at to model, there is Shoreline Village.

Shoreline Village is a picturesque shopping, dining and entertainment zone in Long Beach. It opened in 1982 and was built on landfill as part of a major expansion project by the City of Long Beach. It boasts some very interesting shops and restaurants. There are stores dedicated to chocolate, ice cream, beef jerky, hot sauce, Turkish rugs, socks, and Italian made clothes. There are also restaurants, among them an Irish pub, a seafood restaurant and steak house, and a Cajun restaurant. There are small boats, large boats, docks, piers and birds. There is also an arcade with games, where you can win prizes.

## THERE IS BRICKERSVILLE



*The Ice Cream Shop at Shoreline Village*



*Trish's first Ice Cream Shop model in LEGO® bricks*



## THE LONG BEACH PIKE JOLLYBALL MACHINE

Additionally, there is one very special category, which is called “The Long Beach Pike Jollyball Machine”.

The Long Beach Pike Jollyball Machine is a LEGO® Great Ball Contraption (GBC). For this category, individuals that have GBC modules, models, or artwork of the historic Pike or Shoreline Village will be teamed up so that they can create a GBC circuit, supporting visuals and team story of how the visitors (the LEGO® balls) are participating in rides and visiting the various entertainment at Shoreline Village and the historic Long Beach Pike. We plan on creating multinational teams at the event, so there will be opportunities for new collaboration and to create new connections.

This machine contest started, as many LEGO® projects do, as a project for a LEGO® Fan Convention, in this case for Bricks LA. The goal of preparing for exhibition or competition provides great motivation for getting a project done. First with a concept for bringing GBC modules together in what was called “The GBC Flash Mob”. Joshua Gay from Seattle brought an entire circuit in lovely grey (all the same color). This year, Robinne Ponty – a mechanical engineer, GBC fan and member of the Long Beach LEGO® User Group LBLUG (whose Ambassador is Jenny Tate) – helped to make a circuit of our modules. It was the first Long Beach Pike Jollyball Machine! Joshua stopped by with a friend to say “I’ll be back” with more modules in 2021!

In January, we’ll head back to BRICKS LA 2021, run by Ayleen Dority, for our next GBC gathering!



The first Long Beach Pike Jollyball Machine: The balls climb two sets of stairs, slide down the Bamboo Slide, take a smaller ferris wheel and then skate across the edge of the GBC ball holder to enter the double ferris wheel. Trish used two existing models for this project – Basic Stairs by PG52, and Wheel Lift by ALittleSlow. Both of these were modified by Robinne Ponty and Trish Tsoiasue. Robinne brought the little ferris wheel.

### FOR MORE INFORMATION

Those wishing to find out more about the contest should visit the Brickersville website (<http://www.brickersville.com>), join the Brickersville Facebook page and email list, or email [brickersville@gmail.com](mailto:brickersville@gmail.com) to keep updated with competition details.

If you're visiting Long Beach, be sure to drop in at Brickersville, 419 Q Shoreline Village Drive and at the Atomic Basement and Creator's Lab, 400 E. 3rd Street.

Media who wish to interview our team, or receive our media package, please contact us!

#



# Fairground Amusement Sets

*text by lluisgib*

*images by lluisgib and LEGO® System A/S*

Although it is true that throughout the history of LEGO® there have been some sets related to amusement parks / fairs (read Fabuland, Paradisa, Creator, Factory...), in the last decade there has been an explosion of these sets, much more aimed at setting up your own amusement park, than at being a mere anecdote of one particular theme or other.

Let's go through these sets and see what possibilities they have of being incorporated into a large amusement park on a miniature scale...

## CREATOR EXPERT

### 10196 – Grand Carousel (2009)

I remember this set with special affection. It was probably the forerunner of the sets we have today. A test bench to analyze if a set of these characteristics was possible and what acceptance it would have by the AFOL.

Both the mechanics and the set itself are fragile. When you build it, it works properly ( it includes a motor) and it has the function of raising and lowering the horses and the gondolas. But with normal operation the mechanics loosen up and start to fail. It's also on a Baseplate 48x48. The set is very heavy and with this Baseplate it doesn't have enough rigidity, so parts of the set become detached during transport. In my case, I have the set on a 48x48 MILS base, which gives it much more rigidity and does not affect its operation.



### 10244 – Fairground mixer

We waited five years for a new attraction to appear. It wasn't until 2014 that the Fairground Mixer arrived. According to Jamie Berard, it was a dream he had, plus another proof of concept. It really has nothing to do with the 2009 Carousel, both mechanically and visually. It's an attraction on a truck trailer and some small side attractions.

It works very well. It spins very fine because, after all, the spin is based on the friction of a tire on some tiles. With the weight of the set, it does not slip and through Technic gears and axles the movement is transmitted to the arms. As a set, it is very complete and the fact that you can fold the arms and leave it as a truck trailer is a great idea perfectly implemented.

The set works manually, but it is ready to be motorized, like the other CREATOR EXPERT sets that follow.



### 10247 – Ferris Wheel (2015)

The following year we had another one of those mandatory attractions for any amusement park: The Ferris wheel. It's true that in 2007 there was a CREATOR Ferris Wheel. It was not a miniature scale but some of its technical solutions were replicated in the new Ferris wheel.

The Ferris wheel is impressive. It works very well, with a tire that provides traction to the outer rim of the wheel. Also all the access to the wheel is very detailed. However, once again the model is fragile, mainly in the arms of the wheel and in the supporting pillars. With a few extra parts it is improved remarkably. As in the case of the Grand Carousel, I have applied these small modifications to be able to transport it and enjoy the wheel at events.





## 10257 – Carousel (2017)

It seems that someone was left with a thorn in the side of the 2009 Carousel and a new version was launched in 2017, with many improvements in both design and mechanics, due in part to the availability of new parts.

The set is much nicer. Brighter colours, more detailed designs, more robust... Instead of using a Baseplate as the base of the set, the Carousel is mounted on a base of plates and bricks, which also includes the rotating mechanism. As in the previous Carousel, the movement of the gondolas/animals is on the roof protected by the decorative canvases. Although conceptually the method for generating this movement is the same as in the previous Carousel, it has been improved in sturdiness and mechanical simplicity.



## 10261 – Roller Coaster (2018)

And in 2018 came what for many is the crown jewel. In order for LEGO® to launch a roller coaster in good condition, it had to develop a new system of tracks and wagons. It seemed unthinkable... until at the end of 2017 the Joker Manor (70922) appeared. That gave rise to dreams, and the following June the desired set appeared.

The new system of rails and wagons works very smoothly. It is able to make the tour without the change of piece being noticed. I can't say the same for the lift. The system is complex and does not work with the finesse of the rest of the ride. As far as aesthetics are concerned, the set is majestic. It has the entrance path, the minimum height measurement, the access turnstiles to the wagons, the stand with the typical photo taken during the tour... It is an excellent set in every sense.



## CREATOR

Man does not live by big attractions alone, so other themes such as CREATOR have also made their contribution to the fair. Obviously we cannot expect the same level of detail as in CREATOR EXPERT, but that does not detract from the fact that they are good designs.

## 31084 – Pirate Roller Coaster (2018)

Following the pull of the CREATOR EXPERT roller coaster and taking advantage of the availability of new parts, the CREATOR roller coaster was launched. It is inspired by the theme of Pirates and has a similar route to the Joker Manor. Its construction is suitable for children and it is quite affordable for early ages, with a remarkable result and performance.

The set has a very elegant visual appearance. From the design of the wagons, to the decoration of the tour and even the operator of the attraction is dedicated to a pirate fortress.

It is difficult to motorize this set, as you have to add quite a lot of mechanics and you would probably lose the clean aesthetics it has.

Being a CREATOR 3 in 1, there are two other attractions that can be built with the same set, which gives more possibilities for our fair.



## 31095 – Fairground Carousel (2019)

This year a new set of CREATOR has been released dedicated to the fair. It is a Carousel in which the gondolas move laterally by the centrifugal force of the turn of the attraction. The assembly of the set is not complex, which means that with little effort we have a functional attraction. The gondolas are very fun, including 3 rockets and a cow. The attraction is crowned by a large flying saucer with an alien inside and the letters UFO.

To make the attraction as real as possible, it has a control panel and an access platform to the gondolas. A fence separates the passengers to avoid accidents. Of course, there is also a ticket kiosk. To complete the set, an ice cream cart and a bench to relax after ending up dizzy at the attraction.

The set is prepared for motorization. By removing the handle and only turning a technic part (see pictures) you can attach a PF M motor and have the attraction running automatically. It is advisable to use an IR receiver or a 9V speed regulator as otherwise it turns too fast.





## FRIENDS

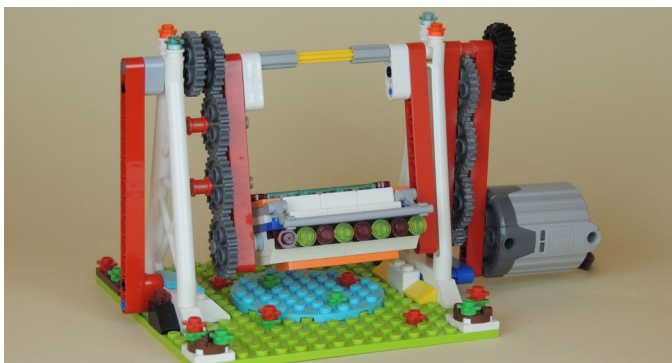
Interestingly enough, in the year that CREATOR EXPERT “took a break” from fairground sets, LEGO® FRIENDS was the big surprise in this respect. One might think that FRIENDS is a far cry from the CREATOR theme, but you can choose to make a section in the amusement park for this type of set, modify it to give it a less “girlie” look, or simply mix it up. Why not?

### 41133 – Amusement Park Bumper Cars (2016)

Although this set is called “Bumper cars”, for the interest of this article I will focus on the other attraction. The “Shaker Ride” is a wagon that has a double twist. It has one turn by the circular turn of the beam it is attached to, and another turn on its axis.

This was the set that really got me thinking about the motorization of the FRIENDS sets. In this case I had to modify the design of the attachment of the ride a little. It was necessary to make it more robust and to give it the possibility of coupling a motor. In this case it is an XL motor since more torque is needed.

In addition, another set of gears had to be added and a firm grounding so that the attraction does not move when it operates. You can see that I changed the colours of the liftarms for more standard colours but the essence of the attraction is the same. It's perhaps the MOD that I'm happiest about, and since I did it, it's been accompanying me to events.



### 41128 – Amusement Park Space Ride (2016)

It was the smallest set that year (considering attractions that may have some movement). The set has 3 rockets hanging from the top of the attraction that due to the centrifugal force of the spin, swing out of the attraction and give an interesting sensation of movement.

The set has an element at the top that allows you to turn the rockets with your fingers. With some modifications, the set can be motorized and rotated by a PF motor, preferably with a speed regulator. The base of the attraction has to be modified to be able to attach a motor and some gears. By means of a technic shaft the movement is raised to the top, where the rockets are fixed. You can see in the photo how much the base has had to be raised to couple the mechanics.



### 41130 – Amusement Park Roller Coaster (2016)

Before CREATOR EXPERT's roller coaster madness, FRIENDS gave us a hint of what the future would hold. The 2016 roller coaster was based on 4 stud wide tracks. In addition to the roller coaster, the set included a small Ferris wheel and a freefall type attraction.



The roller coaster in this set could be said to have been a compromise. It pretends to be a roller coaster but it's more like a train with some slope that allows you to launch the wagons. The set's operation is manual and I see it as difficult to motorize, unless many wheels were added to make the wagons go up the slope. Anyway, it's too much modification to have an acceptable result.

The wheel could be motorized. A similar strategy should be followed as with set 41133. I have my doubts that I could have a continuous operation without modifying the fastening of the wagons, but because the CREATOR EXPERT wheel already existed, I decided not to make any effort in this task.



## 41375 – Heartlake City Amusement Pier (2019)

We could say that this set is a revision of the roller coaster of 2016, but with improvements. A lot of improvements.

The wagon circuit is more of a “witch’s train” than a roller coaster. And maybe this should have been the name of set 41130. It is a circuit with roller coaster tracks that is set in a pirate theme (from friends... :D).

The setting is very nice and detailed. The pirate ship is a model by itself. Apart from the “facade” that can be seen, it has a detailed interior with different cameras with animals, skeletons, etc...

There is the mast with the sails and the bridge. Not only is the pirate ship very well reproduced. All the decorations, including algae, oysters, seahorses, jellyfish... are very well reproduced and integrated in the attraction.



In addition to this pirate train, there's a rotating swing. The subset is similar to 41128, but in this case the wagons are linked with chains, instead of using technic axles. It is quite high and if you turn the swing it creates a very nice effect. This subset is easily motorized. As in the 2016 set, the base has to be raised to be able to insert a technic axle to which a motor and some internal connection can be connected.

Finally there are some interesting accessories like a roulette wheel or an ice cream shop. They are complements that allow you to decorate the atmosphere of the fair and that we are given little by little in each set.



## 41337 – Underwater Loop (2019)

Once again we are faced with a sort of reissue of a 2016 set. In this case we are talking about the “Shaker ride” from set 41133. Again we have an attraction that turns on two axes: The beam axis and the axis of the wagon itself.

However, unlike the 2016 set, in this case we have 2 advantages: there are 2 wagons, so the set is weight compensated, and therefore a smaller motor can be used. On the other hand the wagons only rotate on their axis to maintain verticality, so mechanically it is simpler.

We find a set that is set at the bottom of the sea. The two cars are a turtle and a clown fish. Above the box office is a crab. The rest of the attraction is decorated with seaweed, fish and an oyster with a large pearl. A big little set.



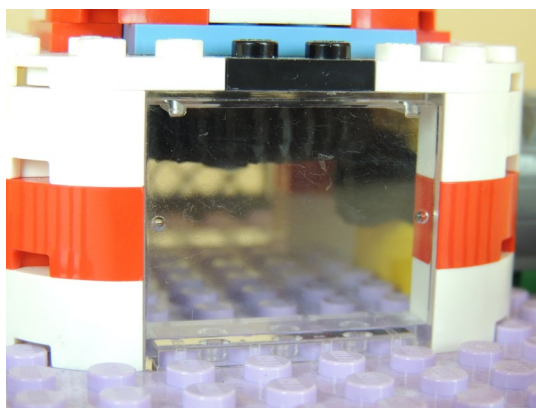


## 41373 – Funny Octopus Ride (2019)

Perhaps the funniest set of the three in 2019. It's a jumping octopus, which spins around and the wagons go up and down. The octopus wears a hat that acts as a spinner. The 4 gondolas are different: a turtle, a whale, a crab and an oyster. They are all made of pieces and they are very funny. On top of the box office there is an octopus.

Functionally there are some tubes that make the wave that the gondolas must follow. The tubes are rough and that's something that somehow makes it difficult to roll the gondolas. It's true that there are some wheels that turn on top of the tubes, but that roughness makes the movement not as smooth as expected.

This attraction is more difficult to motorize. It is necessary to remodel the base so that it does not interfere with the tubes, and that it does not break the aesthetics of the attraction. It's a bit difficult because there are 4 curved plates. A hole is needed in the center to add the turning axle, so the base has to grow by 1 stud per side.



## Conclusions

More sets are available in the LEGO® catalogue. There are polybags with complementary elements, sets of some licenses that include some attraction as an accessory... but they are not the object of this article.

In recent years there has been an explosion of fairground sets. Many of them have motorization included. Others allow you to more or less easily add that movement and create a fairly decent amusement park.

The fact that there is a whole series of sets that are from FRIENDS should not be an obstacle to their integration into a diorama. The designers at FRIENDS have made a considerable effort to give us beautiful, functional and fun sets.

I hope that this does not stop here, and that the future will bring more attractions, more new pieces that will give us more play and more fan MOCs that will not cease to amaze us.

*Thank you to LEGO® System AS for providing some of the sets in this article. The opinions expressed in this article are solely mine.*

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# GBC Circuit at the 2018 Munguía Collector's Fair

by Fernando de Quintana de León and Álvaro Arnedillo Villar (Fision-LEGO®)

On April 8-9 2018, in Mungia (Spain) at the XVI Collector's Fair, we celebrated one of the most important AFOL meetings in the North of Spain. This meet-up was organized by HispaBrick Magazine® and involved the participation of about 20 members from various associations.

With this event we were very pleased with the great success achieved in all sections where we had representation. In this article we will focus specifically on our GBC (Great Ball Contraption) circuit, which was the largest to have been publicly presented in Spain.

Admittedly it is still a small circuit by international standards, containing a total of 29 modules, but it was also assembled by only two people who have been coordinating for just over a year while living about 140 km from each other.

Previous Spanish attempts at GBC circuits at various exhibitions have been hampered by a lack of coordination between participants, resulting in limited success.



For this reason the two authors of this article – Fision-LEGO®, only 15 years old but with plenty of LEGO® experience and passion; and Fernando, an AFOL of 71 years with 2 years of GBC experience – proposed to make a worthy GBC circuit and to work without incident during the two days of the event. We each had experience building, copying, modifying and inventing modules, but had never met or worked together until Fision-LEGO®'s father suggested we collaborate to make a GBC circuit.

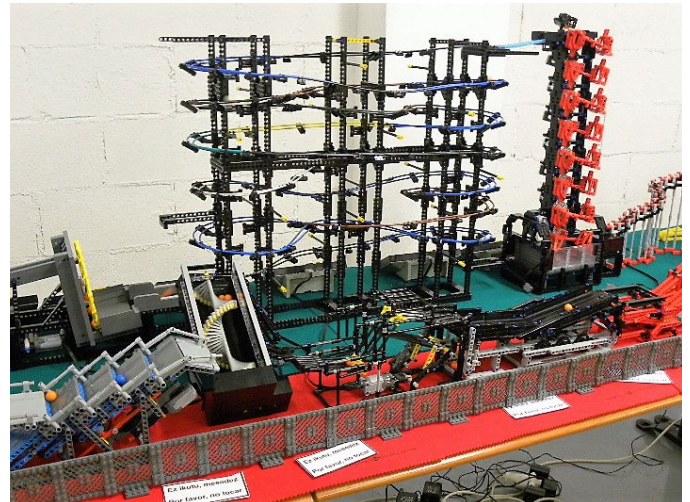
From the beginning we set some rules for ourselves, putting a lot of emphasis on the cleanliness of both the modules and the balls, and not allowing any substitutes for them despite the price of the official LEGO® balls. The modules had to work well in a coordinated way, and before going to any exhibition we discussed and carefully considered the most effective way to exhibit them, so that the public would best enjoy the display.

Within these conditions we are open to having other friends and AFOLs join our GBC project, but for now it is just the two of us and we hope visitors to our exhibitions will enjoy the beautiful spectacle of seeing LEGO® balls pass from module to module all the way around our circuit.

For the circuit presented at the 2018 Munguía Collections Fair, we initially had 29 modules on the morning of Saturday April 8, but were reduced to 28 for the rest of the fair after removing the Akiyuki Electric Train module for which we ran out of batteries.

Thanks to the flexibility of many of the modules, we were able to rebuild the circuit in a very short time during the midday break on Saturday.

The great Japanese genius Akiyuki was represented by 12 modules, plus the beautiful Marble Run connecting to the Bucket Wheel Tower (which we did not count in our module-count, since it is not really a module but rather a beautiful and spectacular start ramp).



There were also modules from Maico-Arts, who has been breaking records all over Europe, and from Nico71, the great French creator who has designed GBC modules as well as a loom, a watch, and a Citroën 2CV among his many creations.

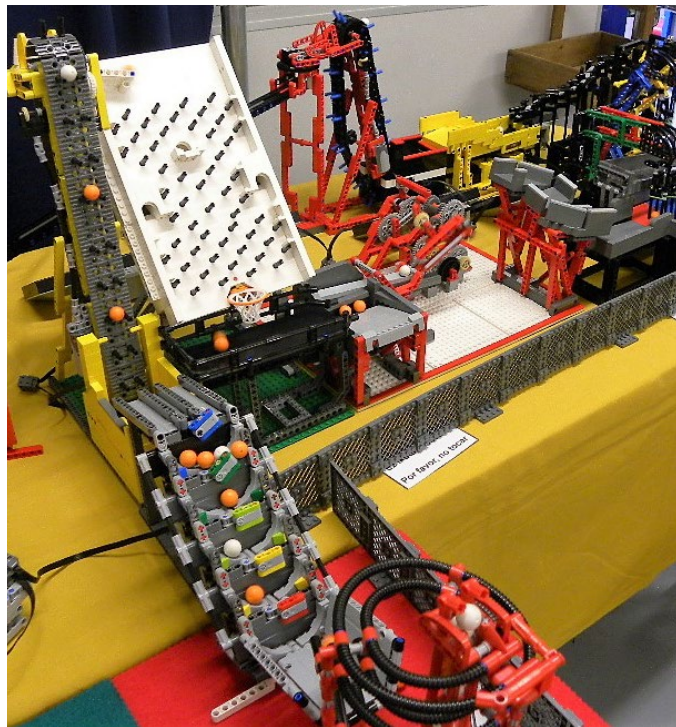
We have presented the beautiful and effective Torso Cardan Lift, the Tofe59 Oscillating Ramp (for which Fision-LEGO® has published instructions in LDD), and the Superfin619 Steering Cup, as well as several other modules based on what we have seen in various GBC videos from other exhibitions around the world. We have tried to copy or improve these latter modules, but in most cases we do not know their actual authors.

We used between 250 and 300 balls for our display. We actually started with 360 but then reduced them, while ensuring that all modules always had balls in process, as it is very ugly to see empty modules on a circuit. All these balls returned

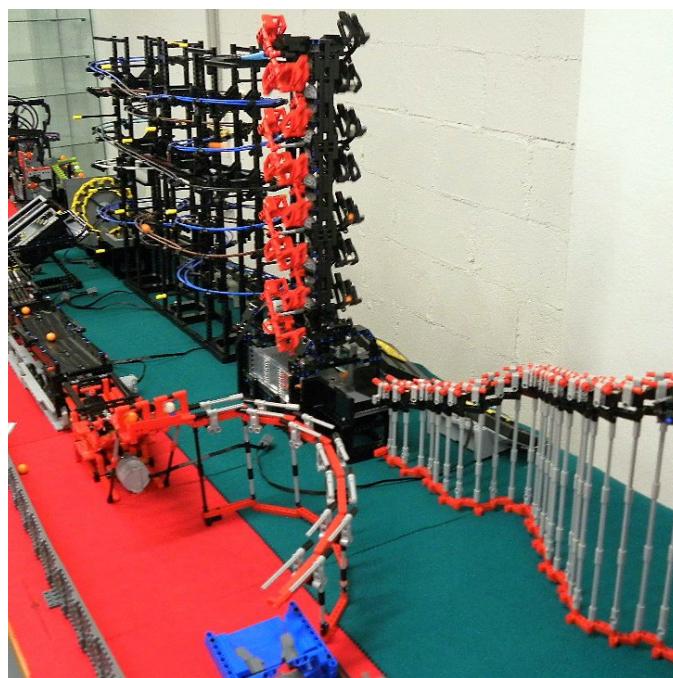
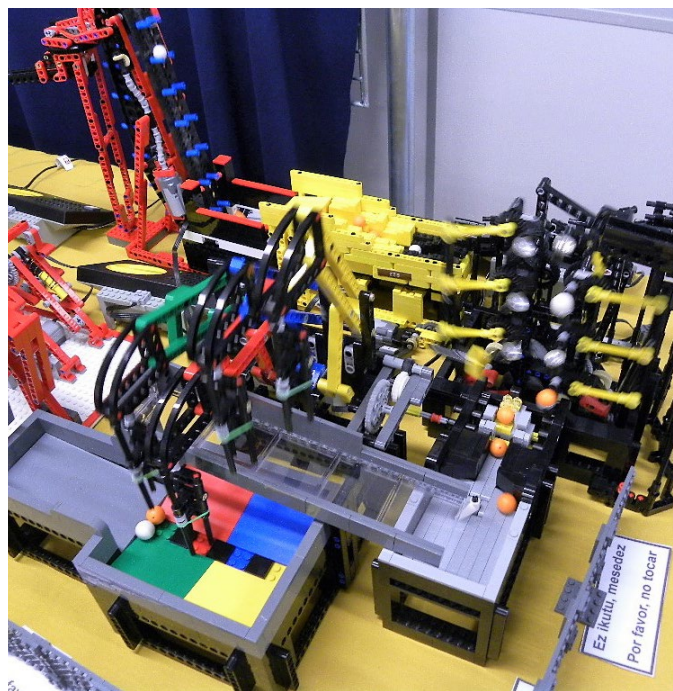
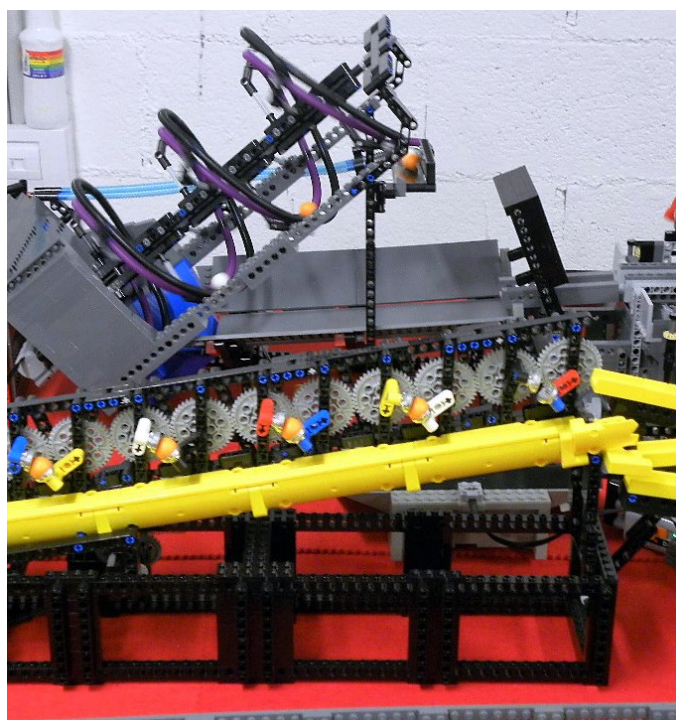


home after the event, indicating the good performance we had with the circuit, interrupted only by the occasional jam or failure of a module.

Thanks to the use of certain modules, such as the flexible snake output used by Akiyuki, we could isolate any module with a problem without affecting the operation of the rest. As a power supply system we used 27 regulators from the old 9V trains, as we think this system allows for the easiest regulation of speed for each module, and it does not depend on batteries.



We used only 27 because two of the modules moved with a connection between them, and the train only works with the batteries of the carriages, which also move the loading ramp and unloading mechanism apart from their own travel movement.



So almost every module had its own regulation. All of these regulators were connected to a base strip with a switch to allow for the immediate shutdown of the whole installation in case of a major problem, and connected to this base strip were other strips for reaching different points of the circuit.

This has been a little bit of our history with GBC's, from both Fision-LEGO® and Fernando, and we thank our mutual friend Antonio (Legotron) for the opportunity to share it here with HispaBrick readers.

Our circuit may still be small in comparison with those shown at bigger expos around the world, but we look forward to inviting other AFOL GBC-enthusiasts to join us in extending our circuit with new modules in the future.

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# Tutorials

## Programming the EV3 with Swift Playgrounds Lesson 4 – Move Object

by Ahmad Sahar

Hi, It's Shah again. For those who don't know me, I'm a professional trainer specialising in MacOS and iOS software and hardware, and I also conduct classes on iOS App Development and LEGO® Mindstorms.

In the last lesson, we made our robot turn. In this lesson, we're going to make our robot interact with an object.

What you need:

An iPad with Swift Playgrounds installed.

LEGO® Mindstorms EV3 Education (set no. 45544) or Home (set no. 31313).

### Before you begin

For this lesson you need to build either the Educator robot from the 45544 set or the DrivingBas3 from the 31313 set.



45544



31313

The instructions for the Educator robot can be found here:

[http://robotsquare.com/wp-content/uploads/2013/10/45544\\_educator.pdf](http://robotsquare.com/wp-content/uploads/2013/10/45544_educator.pdf)

The instructions for DrivingBas3 can be found here:

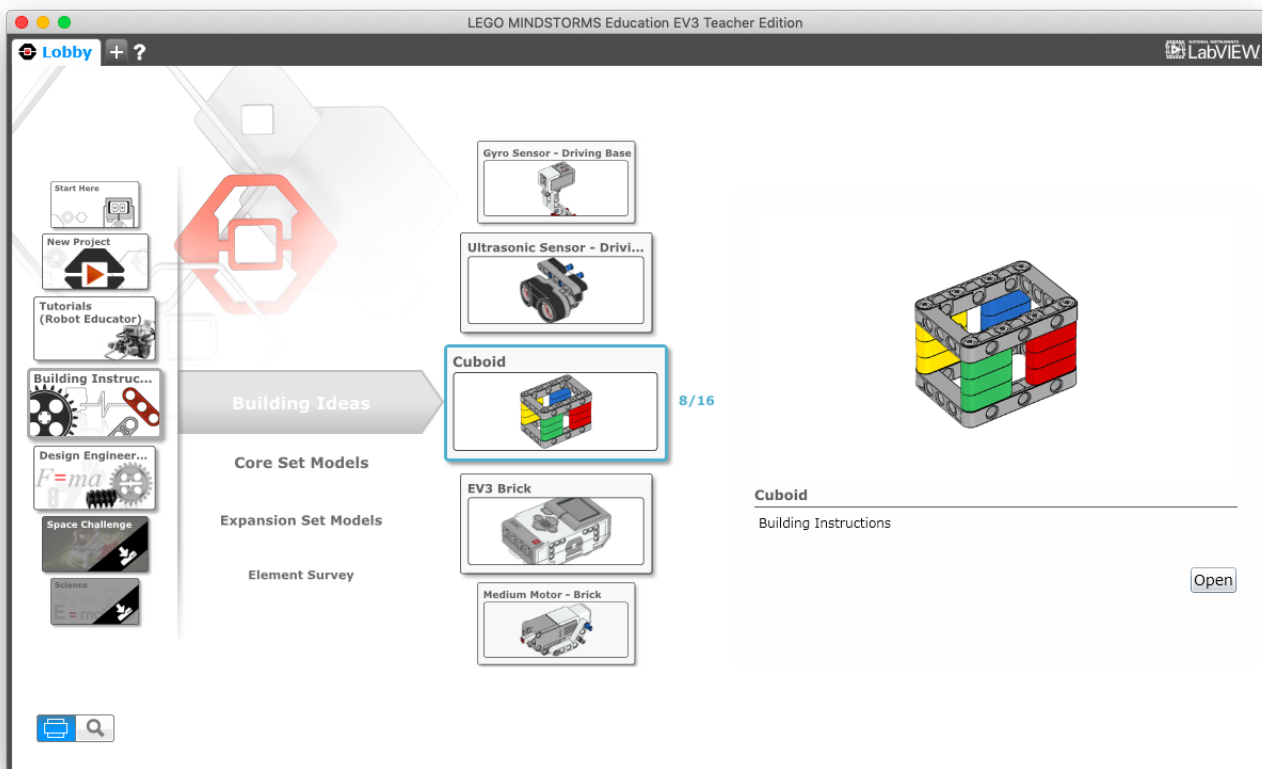
<http://ev3lessons.com/RobotDesigns/instructions/DrivingBas3.pdf>

Make sure you have fresh batteries in your robot, that your iPad is fully charged, and that your iPad is paired to your robot.

You'll also need to build a Cuboid. Instructions are provided in the Education version of the LEGO® Mindstorms software, which can be downloaded here:

<https://education.LEGO.com/en-us/downloads/mindstorms-ev3/software>

If you have the 31313 set, just build something similar in size and shape. Color isn't important at this stage.



## Move Object

You can use the template we used in the last lesson, or you can download a fresh copy. Remove all the code from the template, and connect to the EV3 brick.

Tap ev3 from the suggestions list. It appears on the page. Tap the dot in the suggestions list. Scroll through all the suggestions in the suggestions list until you see this one:

*motorOn(forDegrees: Float, on: OutputPort, withPower: Float, brakeAtEnd: Bool)*

Tap it to insert onto the page.

This is a Swift function which is similar to the EV3-G Motor block.

It has a number of parameters:

forDegrees: Number of degrees to execute

on: The port the medium motor is connected to. Can be .a, .b, .c or .d

withPower: The power level specified for the selected port.

brakeAtEnd: Brake or coast at the end of the move.

As you learned in the previous lesson, to change the value for the parameters, tap a parameter. You can either use the on-screen keyboard to enter the value, or choose from the suggestions list.

Modify the code so it looks like this:

*ev3.motorOn(forDegrees: 100, on: .a, withPower: -30, brakeAtEnd: true)*

This makes the motor turn the knob wheel connected to the robot arm, lowering it. Please note you must manually raise the arm so that it's pointing straight up before you run the program.

Next we're going to make the robot move backwards and turn as it does so.

Instead of using the move tank block that you learned about in the last lesson, we'll use the same block you used to move the arm. Copy and paste the earlier instruction and modify it so it looks like this:

*ev3.motorOn(forDegrees: 360, on: .b, withPower: -50, brakeAtEnd: true)*



This rotates the wheel connected to motor b, making the robot move backwards and slewing it to the right.

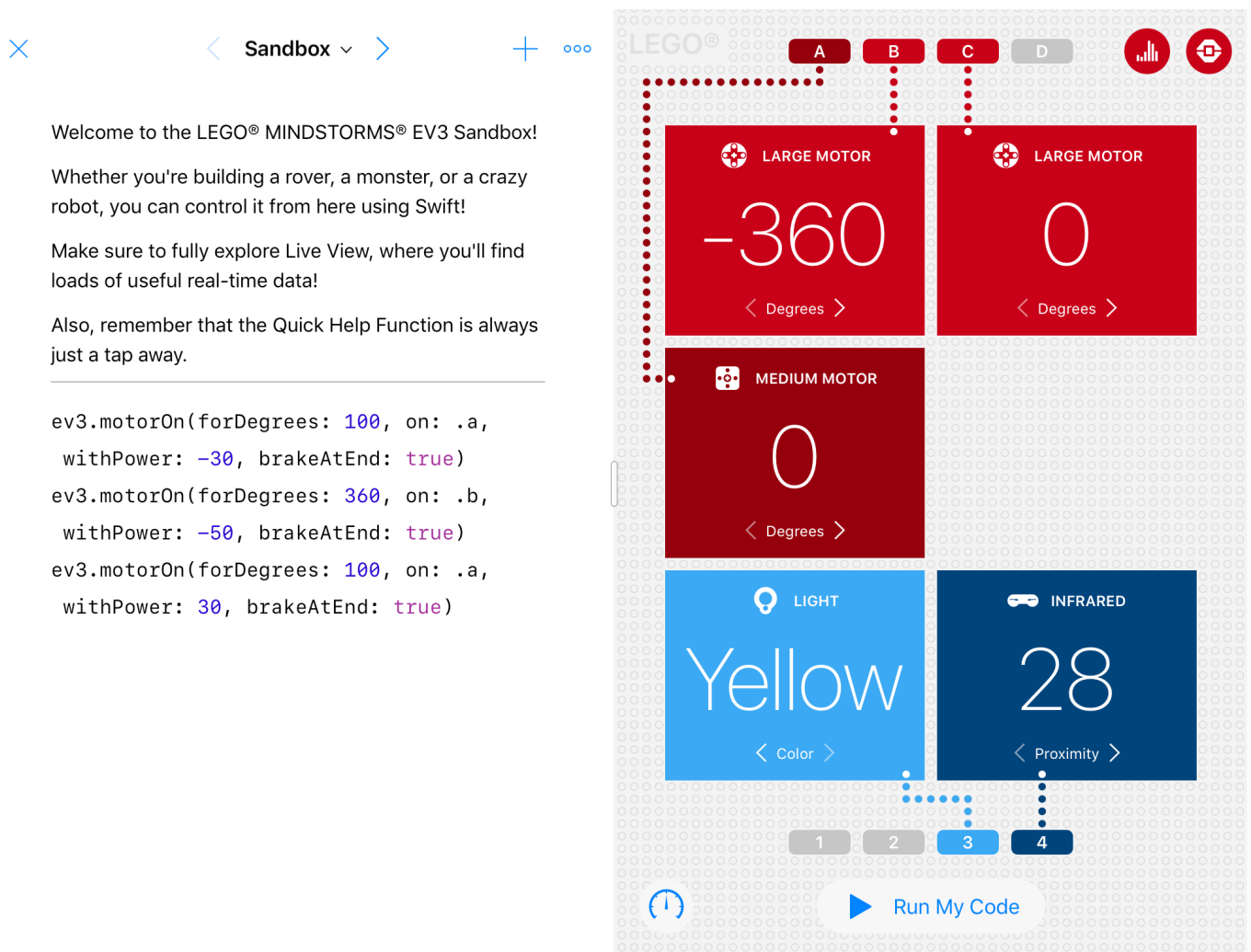
Now copy and paste the earlier instruction again and modify it so it looks like this:

```
ev3.motorOn(forDegrees: 100, on: .a, withPower: 30, brakeAtEnd: true)
```

This makes the motor turn the knob wheel connected to the robot arm, raising it back to its original position.

Your complete program should look like this:

```
ev3.motorOn(forDegrees: 100, on: .a, withPower: -30, brakeAtEnd: true)
ev3.motorOn(forDegrees: 360, on: .b, withPower: -50, brakeAtEnd: true)
ev3.motorOn(forDegrees: 100, on: .a, withPower: 30, brakeAtEnd: true)
```



Place the cuboid just in front of the robot. Position the arm so that it is pointing straight up. Run the program. The robot should lower the arm, trapping the cuboid, move backward while turning to the right, and raise the arm again.

Great job! We've come to the end of the lesson. In the next lesson, we'll program the infrared or ultrasonic sensor to stop the robot when it detects an obstacle.

If you wish to know more about me and what I do, feel free to visit my company website, <http://tomafuwi.tumblr.com>, like my Facebook page at <http://facebook.com/tomafuwi>, follow me on Twitter at [https://twitter.com/shah\\_apple](https://twitter.com/shah_apple) and subscribe to my YouTube channel at <https://www.youtube.com/c/CoderShah>.

All the best and take care.

#

## 2013 LEGO® Friends Minidolls

by Claire Kinmil

The LEGO® Friends theme debuted in 2012 and was an instant smash hit for LEGO®. It doubled sales expectations and increased the LEGO® Company's revenue over 20%. That's why it's no wonder that in 2013 we got 30 new sets, 18 of which included these 24 unique minidolls:



Today we'll look at how the minidolls evolved in 2013.

The five main girls still live in the delightfully colorful Heart Lake City. Emma, Stephanie, Olivia, Andrea, and Mia have kept their faces and hair pieces, but their wardrobe options have expanded significantly – even though the city has yet to build a clothing store.





The 22 female characters have apparently grown up enough within the span of a year that they now acknowledge the existence of boys, of which there are precisely two. Their torso and head pieces are new moulds and the hair parts are borrowed from minifigures.



Even though the total number of unique minidolls has dropped by six, the number of Medium Nougat skin colored dolls has remained at six. Unfortunately, the remaining 18 are all Light Nougat. Still no Nougat, Lavender or Aqua skin tones. Those will all appear in the not-too-distant future.

The changes in the hairstyle department are small but appreciated. We got a few recolors and one new hair mould.



The black hair pieces expanded at the cost of brown and red.

I'm presenting the color distribution using my LEGO® color ellipse because a picture conveys color distributions better than a thousand words.

The LEGO® designers probably had to balance variety with character recognition here.

It's nice to have as many different hair pieces as possible. But if Olivia changed her clothes and hair cut in every set, she would become indistinguishable from any other amber-eyed girl.



The prevailing emotion in Heart Lake continues to be happiness. This could be due to either the beautiful colors or all the money they are making, but either way the residents are all smiling constantly. Not creepy at all.

The only novelty in face printing is the glasses on the schoolteacher. For the modern LEGO® enthusiast, this progress in expanding the minidolls' array of faces might seem very slow, but we must look at it from a historical perspective. The minifigures were 11 years old when they got their first non-classic face. In comparison, the dolls are collecting variation speeding tickets!



Now we need to talk about the weather. Heart Lake has the perfect climate. It's sunny and warm most of the time, and gets snowy and cold only in December. Luckily for us, that's when the Advent Calendar comes out, so we once again get some minidolls in wintry clothes. The two per year will have to be enough until 2017 and the Snow Resort subtheme.



The rest of the girls' wardrobe is more appropriately worn in the summer. That was clear even in 2012. But now they've got swimming suit tops and new moulds for shorts and a wrap skirt. Assembled together, they create an outfit that screams "let's go to the beach".





Some torso printings and legs pieces are the same as in 2012, but the majority of them are new. None of these legs-torso-head-hair combinations making up a minidoll have ever appeared in that way before.

In other clothing related news, the general color distribution hasn't changed much. There are a few more white and green torso pieces, but fewer white and green pants. Less lighter blue and yellowish orange torso pieces but more legs with the same colors. The proportions of pink, purple and dark blue tones have stayed roughly the same. Black pants now exist. No new colors were introduced. The girls still avoid dressing in sad earthly tones, so the overall look of the theme remains cheerful.



In addition to the beachwear, there are other specialized outfits. Mia is a cook and a magician, and Emma takes karate classes. Stephanie's shirt in which she plays soccer is also somewhat specific, but she doesn't get to be in the photo so as to not ruin their black and white harmony.

All of the 2013 clothing parts can be mixed and matched with each other and with the ones from the previous year. So, the inventory of available outfits grows and we get more customizability! You might even be able to build a fairly accurate minidoll version of yourself... as long as you are a girl wearing modern colorful summer clothes.

#



# Take control of your MINDSTORMS bricks (5)

by Oton Ribić

Finally, the combined knowledge we have collected throughout the previous four articles should now enable us to reach the ultimate goal we strove for: sending commands to our EV3 smart bricks via Bluetooth. Of course, the handiest and the most frequently used type among them is performing controlled motor movements, and that is exactly what we are going to do.

## Assembling the message components

Without trying to explain again each of the command message components, let's just go ahead and work on an example. Let's suppose we want to turn the motor connected to the port no. 2 for one and a half turn (540°) in positive direction at three quarters of full speed, i.e. at the throttle of 75%. And build the message bit by bit.

**1) Header.** Firstly we have got to set up a header of the message, as discussed in the previous articles. Since we are not going to use it for anything "fancy" this time, we will just begin with five zeroes, i.e. five bytes with values of zero.

**2) Direction.** Now we will want to set the motor direction for this command. This is done by adding bytes 167, 0, then the number of the motor which is 2 in our case, and finally 1 for forward, or 63 for reverse direction. So we have got 167, 0, 2, 1 here.

**3) Movement values.** Then comes the main part, the movement instruction itself. It begins with 174, 0, then continues with the number of the motor, again 2. Next is the speed: it is the value 129 followed by the desired speed which yields 129, 75. Next is a rampup value for which we can use zero encoded to five bytes, which is 131, 0, 0, 0, 0. Then finally the angle we intend to turn, 540 encoded in five-byte structure, which is 131, 28, 2, 0, 0. Then the rampdown value which is again zero, turning out to 131, 0, 0, 0, 0. Finally, the parameter that says to brake once completed, which is a simple final byte 1 for this section.

**4) Instruction to start.** Having set all the parameters, we will now add the instruction for the motor to actually start this meticulously prepared work. It is rather simpler: 166, 0, followed by the number of the motor, which is 2.

**5) Wait for completion.** If we want the EV3 to perform the movement fully before going onward to the next one, we will now add 170, 0, 15, which is essentially "wait for completion". Without it, the next instruction will begin while the motor turns, which you may want, or may avoid.

**6) Length.** Let us finally count the length of the message we have assembled: it contains 36 bytes. So we put 36,0 in front of it.

If everything went well, we got the following message and structures.

36, 0, 0, 0, 0, 0, 0, 0, 167, 0, 2, 1, 174, 0, 2, 129, 75, 131, 0, 0, 0, 0, 131, 28, 2, 0, 0, 131, 0, 0, 0, 0, 1, 166, 0, 2, 170, 0, 15

And each part corresponds to its own purpose in matching colors: **Length**, **Header**, **Direction**, **Specifying motor**, **Speed**, **Rampup**, **Amount to turn**, **Rampdown**, **Brake when completed**, **Begin rotating**, **Wait for completion**.

## Sending the message

At this point we are ready to "fire" these final 38 bytes to the EV3 brick via the virtual serial port encapsulated within the Bluetooth protocol. As explained in the previous articles, the EV3 brick will acknowledge receipt of this message 0 when finished. We can then send further messages if we desire so.

If you want to go to the full lengths and implement the encoding of the values into five-byte structures, here are the values for each byte. This assumes that the ampersand (&) is used as a binary AND operator, and >> a binary shift to the right by a given number of places. (This works "as is" in Python.)

```
byte1 = 131
byte2 = value & 255
byte3 = (value >> 8) & 255
byte4 = (value >> 16) & 255
byte5 = (value >> 24) & 255
```

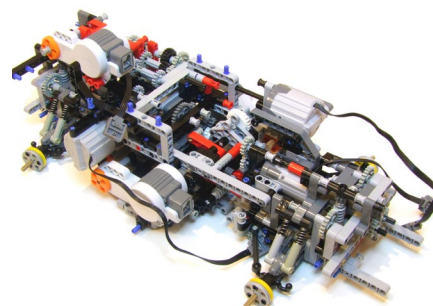
Of course, this works only with integers, but that is anyway the underlying assumption for this entire tutorial. If you will be working with divisions of numbers, it is always a wise precaution to round any numbers entering this calculation down into integers.

Rotating multiple motors at once is done by simply constructing and firing away independent messages, one for each motor, and not enabling the "wait for completion" parameter in them. That way all the rotations will start and proceed simultaneously.

However, at this level there is no simple and foolproof way to control the position of each motor at every particular moment. I.e. if we start one motor at full speed and the other one at half speed, it is only an optimistic assumption that, at any given moment afterward, the latter will have done exactly half the movement of the former.

If you're after very accurate simultaneous movements, e.g. for drawing a diagonal line with an X-Y plotter, consider splitting the movements into smaller segments, and using lots of reduction to further iron out any differences between the motors. Of course, the price to pay in this case is slower execution, so you will have to find the formula that works the best for you.

#







## Sets with an App

*text and images by lluisgib*

In 2019 several sets of different lines have been launched that need a mobile app for their functionality or to increase gameplay. Our colleague Jetro has written several articles on our blog about those related to Technic or robotics. In this article we will make a small analysis of two more general theme sets that use an app.

### Hidden Side

Hidden Side has been the great novelty of 2019 in terms of the link between the brick and the digital world. A collection of sets has been released with a theme that could be defined as Terror, Halloween or Fantasy, which can be played in the real world, with the figures and features of the sets, and at the same time you can expand the game by downloading an app with which you must catch ghosts.



Although it is not the intention of this article, first I will talk a little bit about the set we are going to analyze the app with later. We have built the largest set, the 70425 - Newbury Haunted High School. A nice building that reproduces a haunted school. Without going into the process of construction, it is a very attractive set with a remarkable level of detail, both outside and inside the building.



A characteristic of these sets is that they have a hidden "monster" part, which can be made to appear through some mechanisms. This is part of the "Hidden Side" concept since you can have the model on display without these accessories being seen, or with them being part of the scene.



There are also some complements of the mini-figures that are part of this hidden side of the set, although in this case we must add them manually. The set includes 8 mini-figures with new moulds and torsal decorations. The new moulds correspond to the hair and hoodies of some minifigures and some of their accessories. There is also a ghost dog, with double moulding, with a transparent body part.

But let's talk about the app. First of all, and I think this is something that can be frustrating for many parents, and that will limit the use of the app quite a bit, are the features that the mobile needs in order for the app to work. At home we have top-of-the-line mobiles that are a couple of years old and are not compatible. We also have a mid-range mobile that is 1 year old and not compatible either. I understand that to make augmented reality you need a certain processor power, but when you find that your device is not compatible it can stop you from buying the set. Perhaps LEGO® should think about a "lite" version of the app with less functionality but that allows you to play with any smartphone.

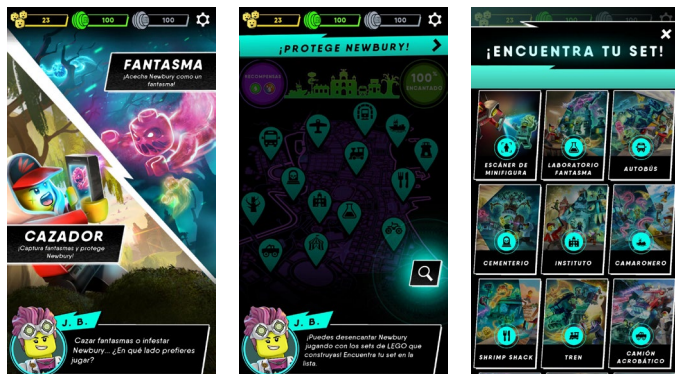


I finally used my mother's iPhone 8, in which I installed the app without any problem and was able to make a first test. We press to start the app. While it loads, there is a funny progress bar, made with 3 ghosts.

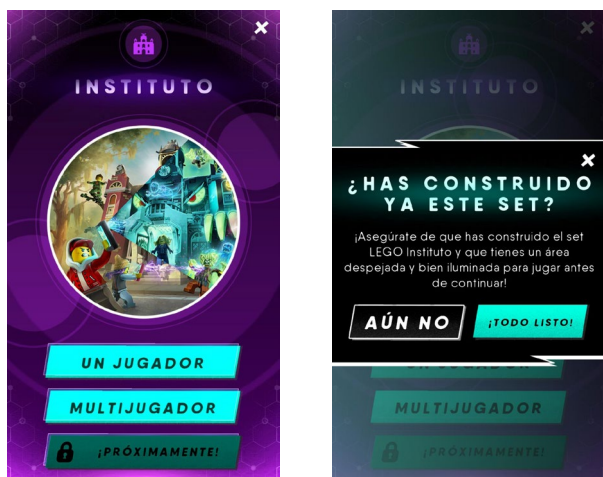


Once it has loaded, we find a first menu that allows us to choose if we want to be a hunter or a ghost. This way we can choose which side we want to play on. In this case we have decided to play as hunters (The screenshots in the app are made with the english version).

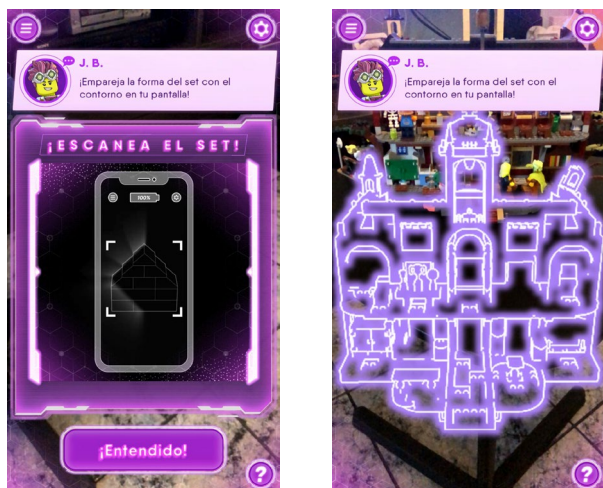
Now we've chosen which side we want to play on. The next step is to choose which set we are going to play with. We have to press the magnifying glass and choose the set from the list. In our case it will be the school.



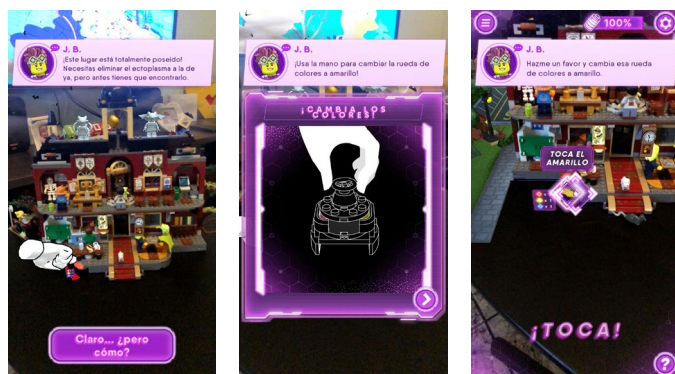
We will choose whether we will play alone or with more players. For this test we will choose "One Player". There is an icon that says "Coming soon" which makes me think that it will be possible to play online. The app also asks us if we have built the set, and gives us some tips on where to place the set to play.



Now begins the part where we interact with the set. First of all we have to scan the silhouette of the set. To do this, a blueprint of the set is shown on the screen so that we can match it with our set.



When the app recognizes the set, the game starts. Messages will appear to guide you on how to proceed to play.



Location of the color wheel

How to choose the color of the wheel

The game guides you step by step Here you are asked to play on the yellow color of the wheel



Looking for Ectoplasm

Ectoplasm detected. You have to touch the screen

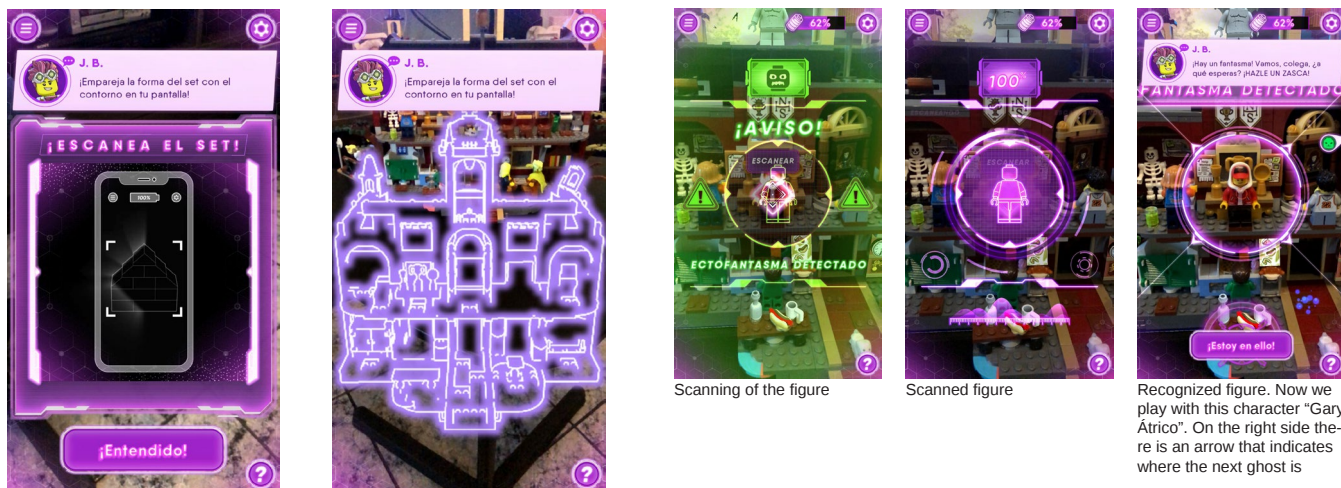
Attack!



As the "fight" against the ghosts progresses, our energy level goes down or up

Minifigures also play an important role in the game. First you have to recognize them

You have to place the figure where the app asks you to



Scanning of the figure

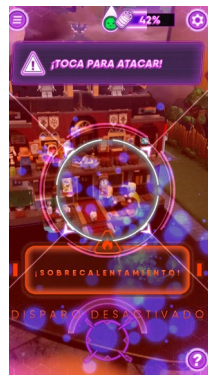
Scanned figure

Recognized figure. Now we play with this character "Gary Átrico". On the right side there is an arrow that indicates where the next ghost is





Ghosts attack you. You have to press the screen to shoot



If you shoot too fast, the gun overheats and stops shooting

I must admit that the app works very smoothly, and that's why a high performance phone is necessary. I've only made an introduction to the game as I don't have the right phone to test it further. Anyway, the app guides you through what to do at all times, and what I've been able to check out is pretty fun. If we put the app together with a very complete, detailed, elaborated set with some quite interesting figures, we can conclude that it is worth investing in a set that will not only give us the physical experience of the bricks, but also a fun virtual experience.

## Disney Train and Station

An unexpected set that arouses passions among Disney fans and train fans alike. This is a reproduction of the Disneyland California train and its station.

In this case the set contains 5 mini-figures. Four of them are variations of existing figures, namely Mickey Mouse, Minnie Mouse, Chip and Chop.

Mickey acts as a locomotive driver and is dressed in a classic steam engine driver outfit.

Minnie is the passenger of the train, and she wears one of her typical red suits with white dots that we have seen so much in Disney comics.

Chip and chop are the stationmasters and porter. Chip is dressed in a navy blue suit with a blazer, a very elegant outfit. Chop is dressed in navy blue pants and vest. In both figures you can see the pocket watch chain.



But the great novelty of this set is a mini-figure that many of us wondered why it was not in either of the two mini-figure collections. It's Goofy. He is dressed in his typical outfit: blue pants with darning, orange sweater with a yellow vest on top and his classic green hat.



The train consists of a steam engine, a tender and two passenger cars. The steam engine is beautiful, with its functional rods and many boiler details. You have to take into account that it is an amusement park train, so the aesthetics are a bit "juniorized". Anyway, it is very beautiful.

The tender is a little higher than the real train, since it has to integrate the battery box / Bluetooth receiver. With the new Powered Up system, in which no separate infrared receiver is needed, the model is much more compact and with less wiring. The engine is located just below the tender, which makes it the traction element.



The train includes two carriages. The first is a panoramic car that has the seats arranged in a parallel orientation to the track, so that passengers can observe the details of the park without having to turn their heads. The roof can be opened so that the figures can be introduced without any problem.





The second car has a more classic design. It's a closed cafeteria car. It is well lit inside as it has many windows, and has doors on both sides to access the access platforms and a balcony/viewpoint.

If we look at the interior, we see a design set in the 19th century, with wooden chairs upholstered in velvet and a tea set.



The station is not an accessory. It's a complete building both outside and inside. Its construction is very detailed and it takes longer to build than the train. You can see in the photos the amount of pieces needed, for example, to decorate the corners of the building, or for the ceilings.



The interior doesn't come up short. It has all the details in each of its rooms.



We see nano-scale reproductions of Disneyland trains. Above them are the pictures of those trains. There's also the ticket office with the table of prices for the tickets.

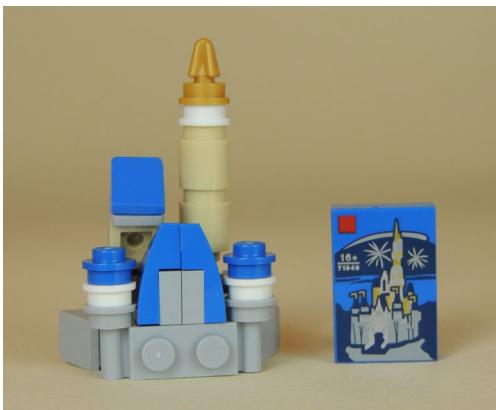




On the other side is the waiting room, with many accessories, such as a scale to weigh suitcases and goods, a bucket for umbrellas, a lamp and a bench to sit and wait for the train. On the upper floor there is a small rest room, I imagine for the stationmaster, where he can quietly drink tea sitting in his armchair.

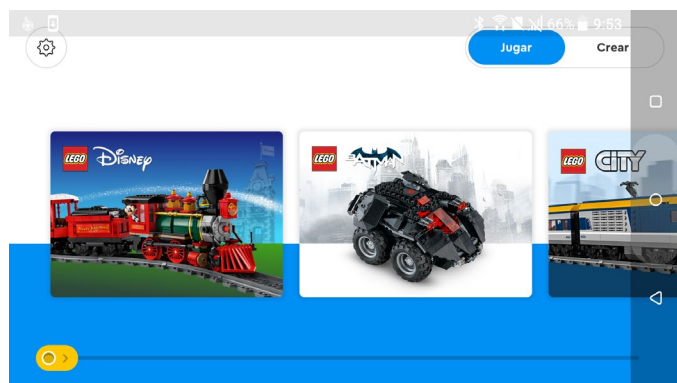


There's a very LEGO® detail. It is the nano-scale reproduction of the Disney Castle set and its corresponding box.

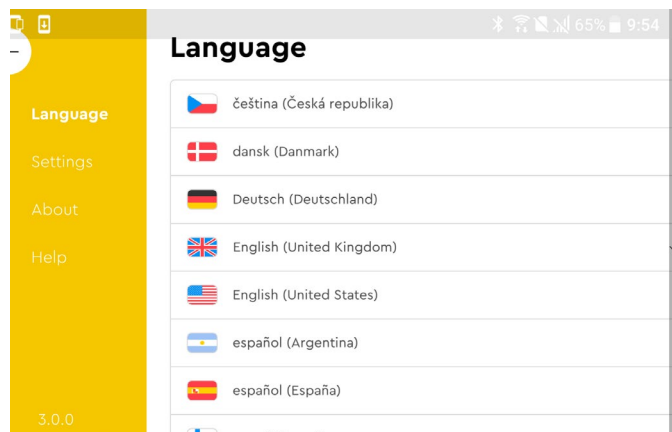


But let's go to the app, which is what this article is about. In this case the app "Powered Up" can be used on any phone with Bluetooth Low Energy and the device specifications required (check the minimum specifications required).

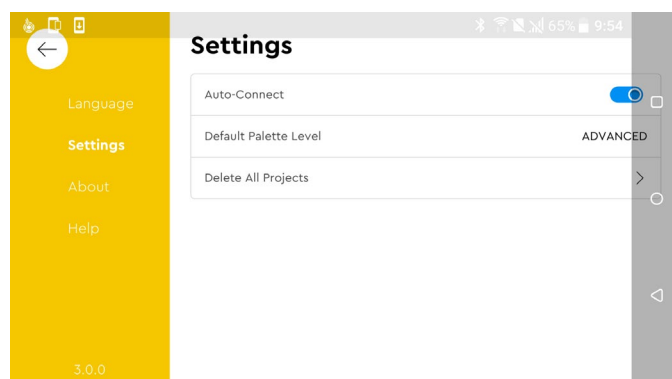
When starting the app, we can choose if we want to use it for the Disney Train, for the CITY trains or for the Batmobile. I understand that as more sets are released with Powered Up, icons will be added.



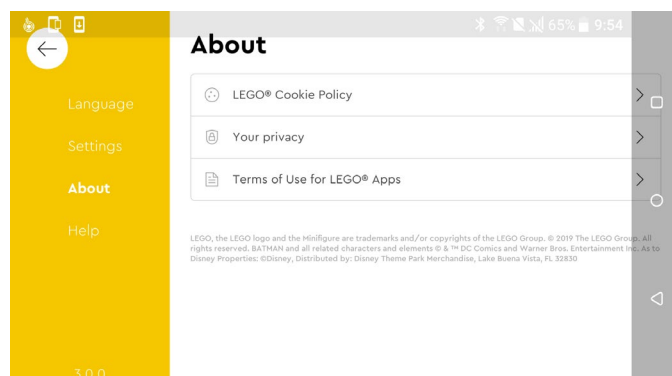
The app allows us some configuration, like the language.



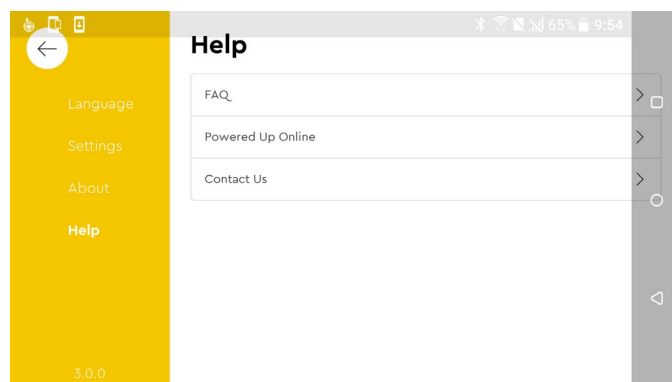
Some parameters such as auto-connect.



Application information.

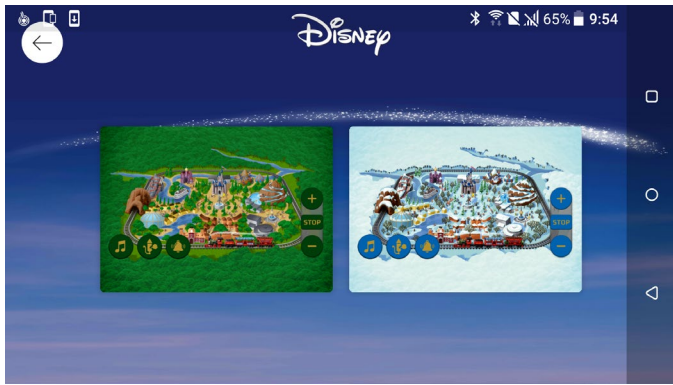


Or the help menu.

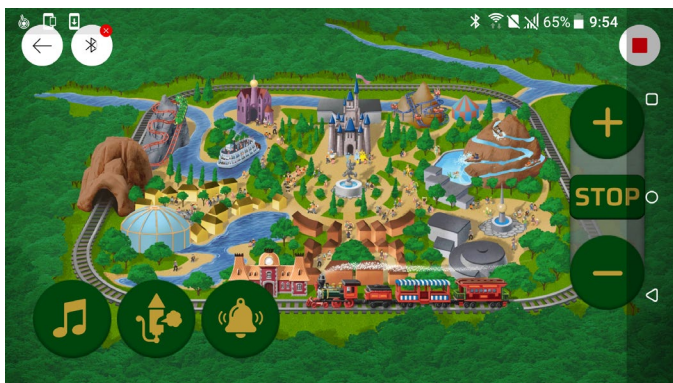


Returning to the main screen, we enter the Disney Train menu and it lets us choose between 2 skins:

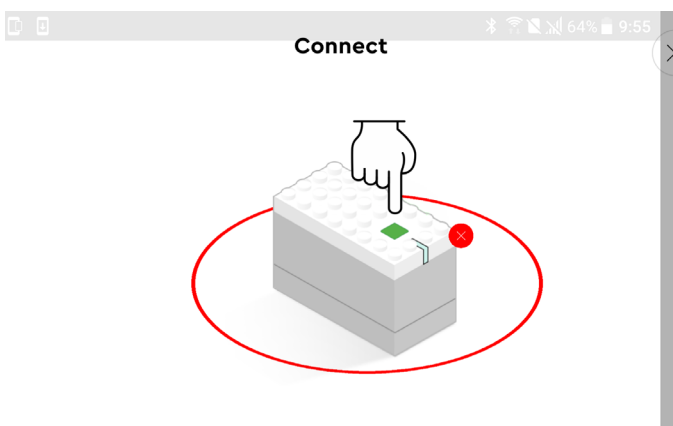
- Summer
- Winter



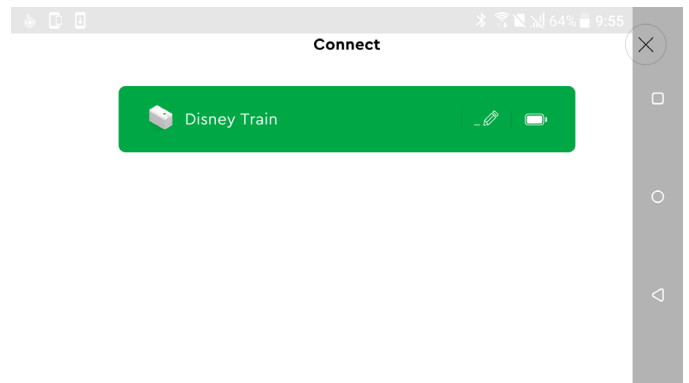
Once inside one of the skins, we have three buttons at the top, from left to right: Exit, Bluetooth Settings and Emergency Stop (Stop engine and sound). At the bottom left there are buttons for the sound: On/Off, Whistle and Bell. On the right we have the speed control, with 10 steps per direction. There are also sounds related to the acceleration or braking of the train.



If the Bluetooth Hub is not connected, we can press the Bluetooth configuration, where we will find a small guide on how to turn it on.



Once connected, a screen appears with the name of the Hub, which we can change, and the battery level.



This app is very simple, but enough to control the train. Apart from the design of the skins, the functionalities are the same in both cases. The set comes without a physical remote control, so I understand that the app will always have support and that in a few years there will be no problem to find it in the app stores and be able to use the train. It's also worth going to Shop at Home and buying a loose remote, to avoid any future scare.

## Conclusions

The physical and digital worlds are becoming increasingly connected, and these are two examples of how LEGO® wants to adapt to the times, but without losing the essence of the brick as it did in the past. I don't think this is a threat to the purists.

The sets analysed are a fun constructive challenge. Very detailed and with many complements that make them unique. Without the use of apps, they are already worth it. I am concerned about the use of apps in the future. We know how the world of smartphones is and how they evolve and become obsolete at a worrying speed. I understand that LEGO® has taken that into account and that we won't suffer in the future, especially when it comes to bluetooth control.

*We thank LEGO® SYSTEMS A/S for providing the sets for analysis. The opinions expressed in this article are solely mine.*  
#





# Welcome to CONTROL+

by Jetro

## CONTROL+

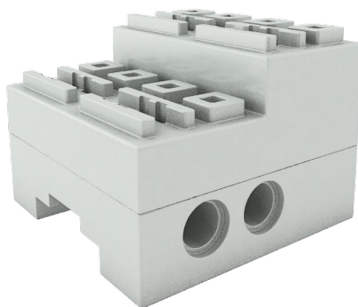
There are many different types of LEGO® Technic fans. Some just want to build sets, others just want to build MOCs. Some prefer full remote control vehicles and others would rather see mechanical innovation. Some want it all...

The introduction of Power Functions in 2007 brought new functionality to LEGO® Technic. The flagship set of that year, the 8275 motorized bulldozer was a fully remote controlled set with a piece count of 1382 parts which included 4 motors, 2 IR-receivers, 2 remote controls and 1 battery box. Suddenly possibilities were endless: motors could be paired or controlled individually, the introduction of the train remote (#64227) also allowed for precise speed control.



The one big drawback to the system was the communication method. Infrared works fine at short distances and in closed spaces, but gets disrupted by direct sunlight and can't handle bigger distances.

The first solution to that problem was provided by a 3rd party project - sBrick - a substitution of the IR receiver that works with bluetooth. This of course also made the physical remotes obsolete (for use with that platform), but used profiles on a smartphone as a remote controller.



In 2018 LEGO® started rolling out Powered Up, the successor to Power Functions. This new platform no longer relies on infrared communication, but rather uses bluetooth, specifically Bluetooth Low Energy (BLE). Receiver and battery box are placed in the same housing and, as before with Power Functions, the first Powered Up hub has 2 motor/sensor ports. The big hardware difference (besides the connection method) is the fact that motors can no longer be stacked. Each motor requires its own port. In addition, the system uses new plugs, breaking compatibility with Powered Up and its predecessor 9V.

## What is CONTROL+

The Powered Up platform comes with a physical remote (e.g. used in Train sets) but also allows you to use an app on your phone to control your Powered Up creations. Two motor ports is very little for a Technic set, and 2019 brought the introduction of new hardware, with a new name: CONTROL+, a platform aimed at integration in LEGO® Technic. The hub is larger and takes 6 AA batteries (instead of the 6 AAA batteries in the smaller Powered Up hub) and has 4 ports (named A, B, C and D)[1]. Despite the new name, CONTROL+ really is just another manifestation of Powered Up. The plugs are the same and the hub and motors can be addressed from the Powered Up app.

CONTROL+ also has its own app. This means that to the untrained eye it may look like this is the (only) way to connect to CONTROL+ models. The CONTROL+ app is quite big and requires a relatively new smart device (phone or tablet) with a decent amount of RAM memory. It contains specific profiles for the sets that contain CONTROL+ elements and comes with advanced control options for those sets. More about that later on in the article.



[1] Four ports is actually not entirely new. LEGO® Boost, launched in 2017) is also part of the Powered Up family. The Boost hub contains 2 internal motors with encoders, named A and B and has 2 external ports that can take additional motors or sensors, named C and D.

## 42099 - 4x4 X-Treme Off-Roader

The first set with the new CONTROL+ elements to come out was the 42099 - 4x4 X-Treme Off-Roader. The set comes with the new CONTROL+ hub and introduced 2 new motor types: Motor No. 2 (L) and Motor No. 3 (XL)



This is not where the innovation stopped. The set also includes a new geared hub with a speed reduction of 5:1 and corresponding CV joints. While this simplifies the build a similar reduction could have been achieved with existing elements: portal hubs and gears. This was exactly the way this problem was solved in the set's predecessor 9398 Crawler. The gearing necessary to get the required torque introduced considerable backlash into the drive train and so the new geared wheel hub is a welcome innovation



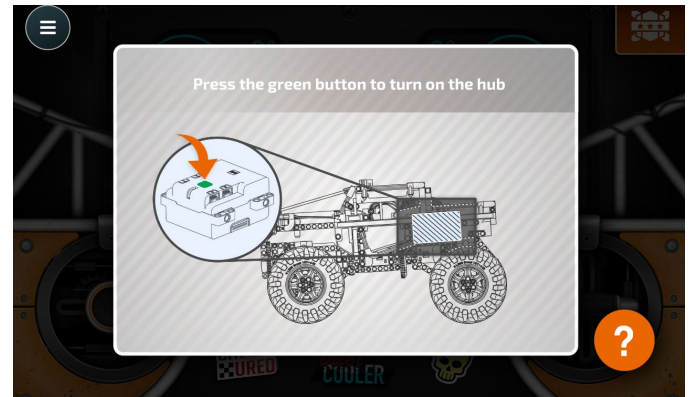
Another cool feature of this set is the fact that the body can easily be separated from the chassis. This means it is also fairly simple to create your own body to go with the model.



## 42099 app control

The CONTROL+ app has very nice graphics for each of the available models. Once you select the model you have the it will load the profile for that set. This is where you need to pass the first hurdle.

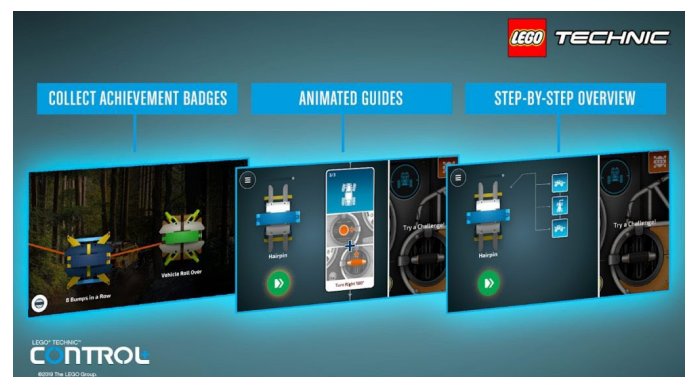
The app asks you to start the CONTROL+ hub that is inside the model.



If for some reason you have incorrectly connected any of the cables (e.g. you connected a motor to port D that should be in port A) the profile will not load! In itself, this makes sense, but there is nothing in the app or in the instructions that alerts you to this. For the Off-Roader this is no big deal as you have a single hub and 3 motors.

Things are not likely to go wrong. Or are they? Rule number 1 after getting a new set is to try and improve it. Do you have a Powered Up LED light cable handy? Since the model has a spare hub port the logical thing would be to connect the lights to the remaining port. But if you do so, the app will no longer load the profile as it detects something is different from the way the set was designed.

After passing this hurdle, the control options and challenges inside the app should provide kids inspiration for many hours of play.





An interesting feature of the app is that when you first connect to the Off-Roader it runs a short calibration of the steering. The app looks for the left and right steering limits and then finds the central position which, at least in my case, was quite accurate. The CONTROL+ motors are smart motors with built-in tachometer.

While they do not have a fixed zero position (like the Power Functions servo motor) they can be used to perform the same task, e.g. steering a vehicle like the Off-Roader.

The main control profile is fairly basic, although it includes all the necessary elements. It also shows that there is more to the hub than just moving motors: you can see the pitch and roll of the model thanks to the built-in gyro sensor in the hub.

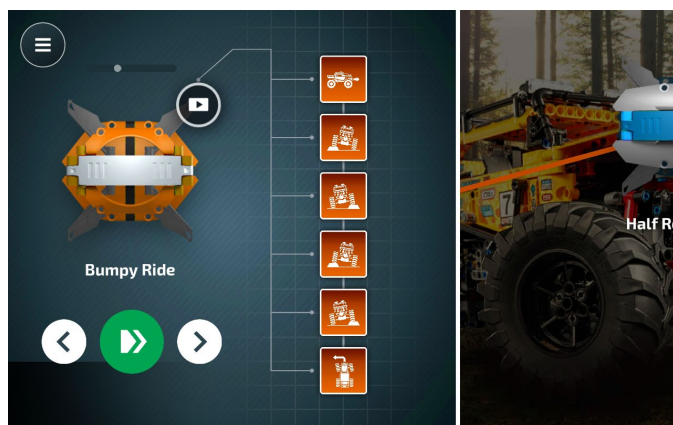


Sliding the control profile to the left you get access to a different kind of control profile for this same model. After confirming the relative position of the model (compared to the image on the smart device) you can make the model move by simply clicking on the area of the screen where you want the Off-Roader to drive.

Moving the model by hand confirms this profile makes use of a built-in gyro: the model on the screen turns exactly in the same way the physical model turns if you move it by hand.



A third option involves completing a number of challenges. Unfortunately my tablet doesn't have a lot of RAM memory and while I have no problem playing videos in any format, the videos included in the CONTROL+ app for this profile appear to be so heavily compressed or encrypted that I have not been able to watch a single one of them without the image freezing up.

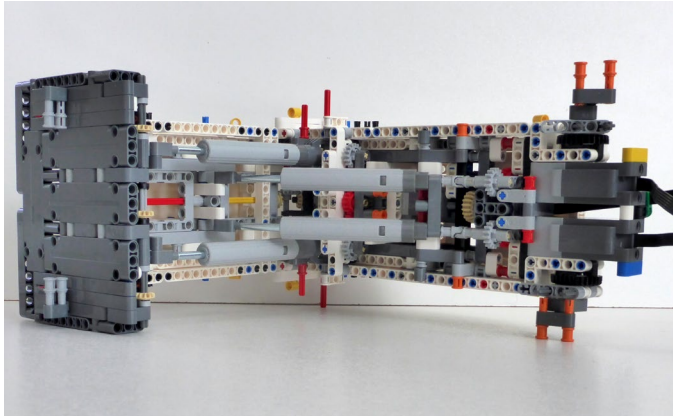




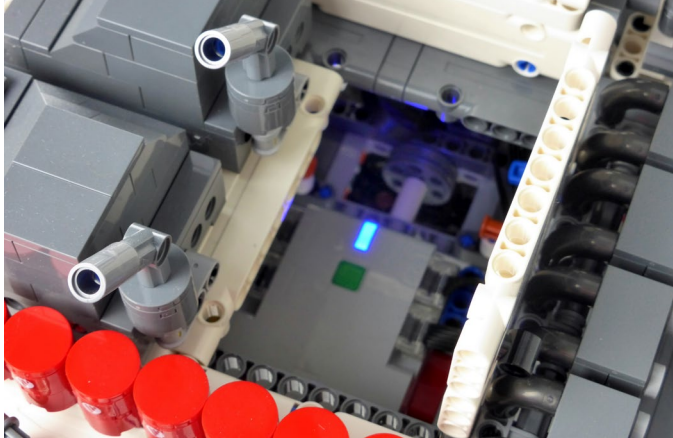
## 42100 - Liebherr R 9800

The second and largest CONTROL+ enabled set to date is the 42100 Liebherr R 9800. With over 4100 pieces and 7 motors it is the largest and most heavily motorised LEGO® TEchnic set to date. The fact that it is the largest set doesn't mean it is the one that takes up the most space. Both the Big Wheel excavator and the Rough Terrain Crane require more space when fully extended, but even so, the Liebherr R 9800 excavator looks and feels massive. As mentioned previously, the CONTROL+ hub has 4 ports, so there are 2 hubs included in this set to accommodate the 7 motors.

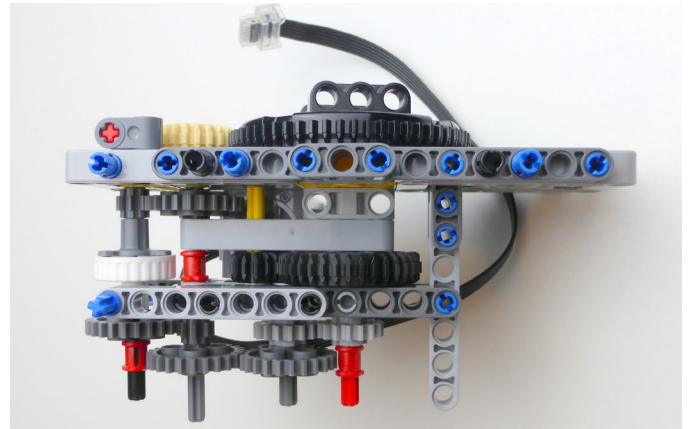
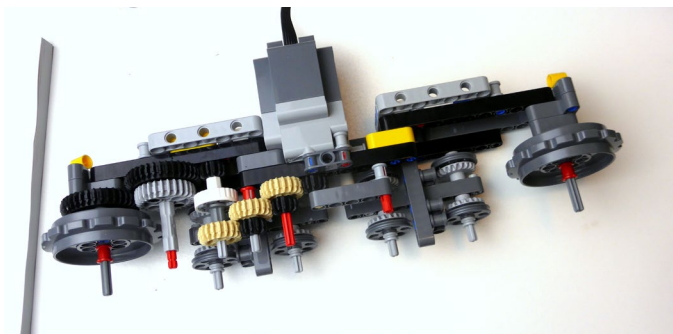
3 of the motors go into the base and are connected to the left and right tracks and to the turntable that rotates the upper structure. The remaining 4 motors are used to articulate the arm and open and close the bucket.



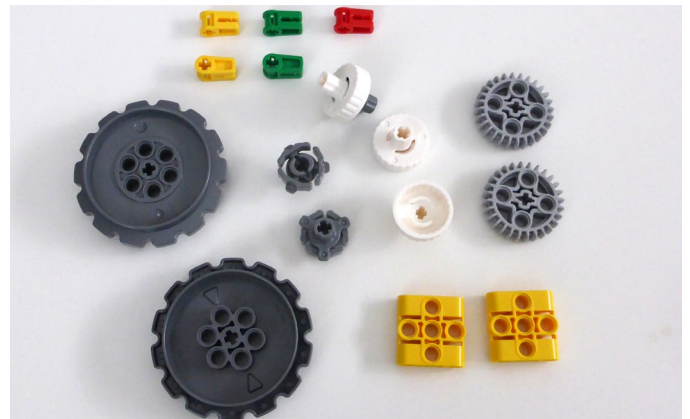
The bottom hub is easily accessed in the base. For the top hub there is a little door in the top of the upper structure to allow access.



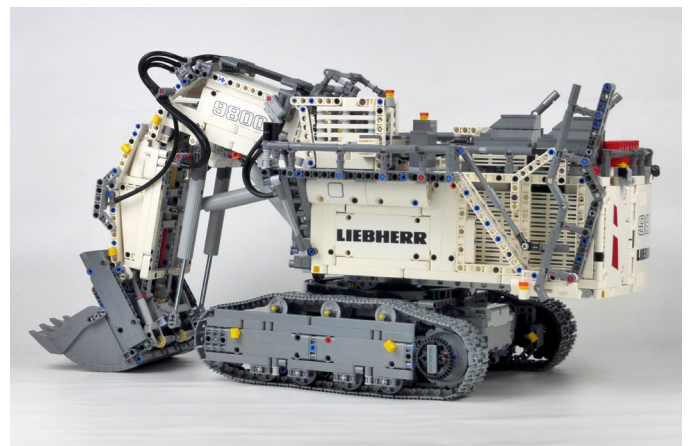
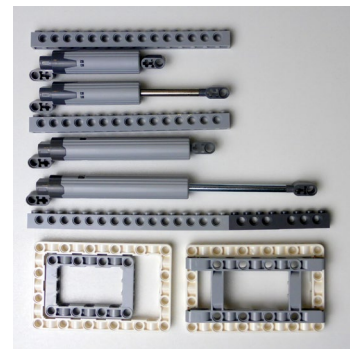
In addition to all the Technic structure, the model is quite detailed and faithful to the original. And despite the fact that, like most motorised models, the gear trains are not particularly complex, the build was quite entertaining. The most complex gearing can be found around the drivetrain and in the gear reduction for the turntable



A model this size of course also required some new engineering and this time LEGO® provided a new clutch gear mechanism to limit the torque the motors can exercise on the transmission. Other new elements include cable clips to route the wires from the new motors and larger sprocket wheels, to accommodate the size of the model.



The set also includes new linear actuators (compared to the old ones in the picture) and larger frames to make it easier to build large structures.





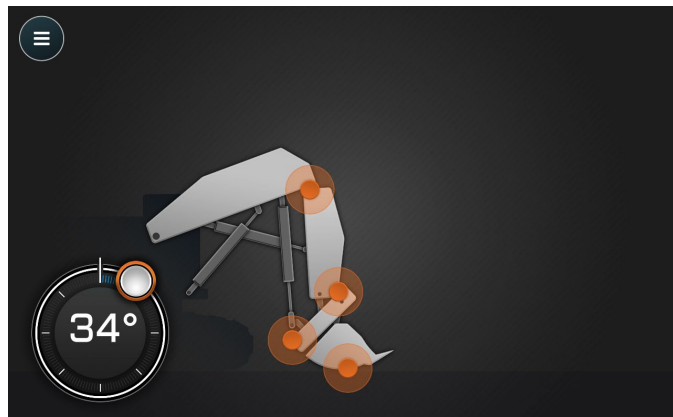
## 42100 app control

The CONTROL+ profile for the 42100 Liebherr R 9800 adds another layer of complexity. Aside from the addition of a second hub, precise control over the arm of the excavator requires keeping track of its position. This is where the new smart motors come in. The app needs to know the exact position of the arm and so it will calibrate each segment of the arm one by one by extending the linear actuators to their maximum position and count back from there. After the initial calibration, the app can be used to place the arm in a specific position all by itself! Calibration should only be necessary once, but if for some reason the model gets out of synch you can easily access the calibration process from the options menu.

After the initial calibration and a quick tour of the main functions of the interface, the control profile for this model is very complete and - after some training - relatively easy and comfortable to use.



If that is too complicated for you, or you simply want an alternative scenario, there is a sophisticated second profile that allows you to move the arm and upper structure by simply dragging key connection points to new locations. The physical model will then mimic the configuration of the arm in the app.



It is even possible to program actions in a palette with model specific programming blocks to move the different motorised parts of the model a specific number of degrees.



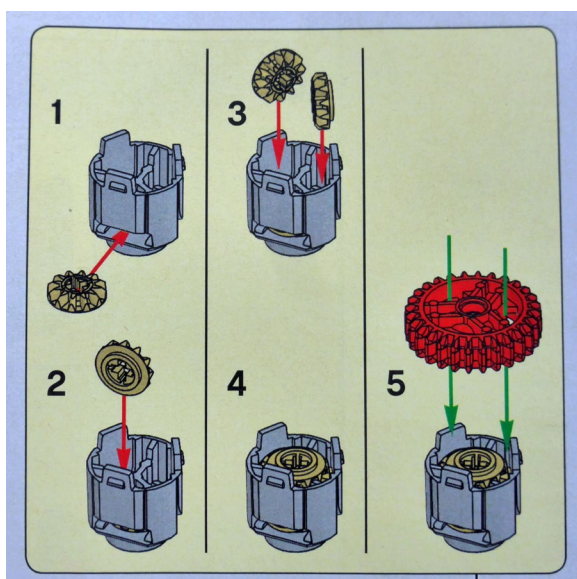
Finally, like in the previous model, there is a series of challenges you can go through with the model. All in all there are plenty of play opportunities with this model. It can take a while to learn how to control it well and the round bricks that come with the set are not the best material to practice with. A smaller grain (coffee, chickpeas) or even sand or sand-like materials make for much more realistic and satisfying practice, but of course those could not be packed together with a LEGO® set.



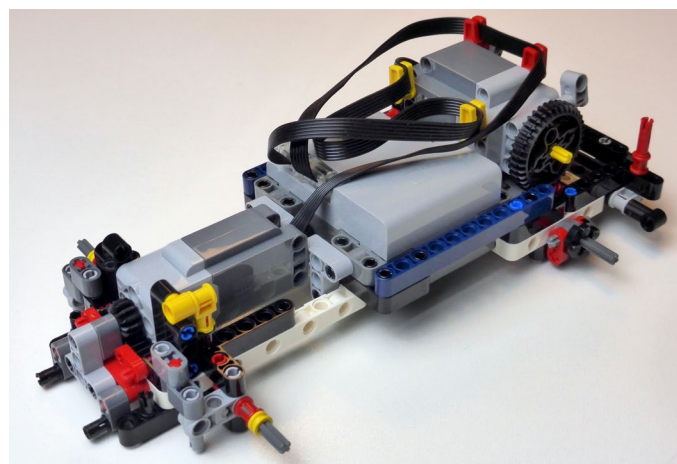


## 42109 - App-Controlled Top Gear Rally Car

2020 added a third and much smaller model to the CONTROL+ family, the App-Controlled Top Gear Rally Car. This set contains the bare basics for a remote controlled car: 1 motor for power and 1 motor for steering. Once again the power of the motors needs to be factored in and so LEGO® has engineered a new, reinforced differential.



The motors are placed in the most direct way possible and gear trains reduced to the absolute minimum:



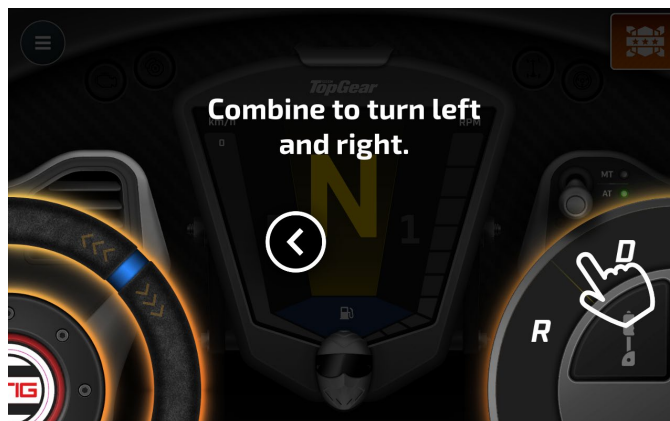
The result is a relatively fast build and a very fast car. I am not especially happy with the looks of the car, nor am I a fan of sticker heavy models. Quite frankly, even though I like Top Gear, the license doesn't provide any additional incentive to me. On the contrary, from my perspective all it does is add cost. Even so, this is the cheapest introduction to CONTROL+ to date and the model has everything that is required to make a remote controlled car.



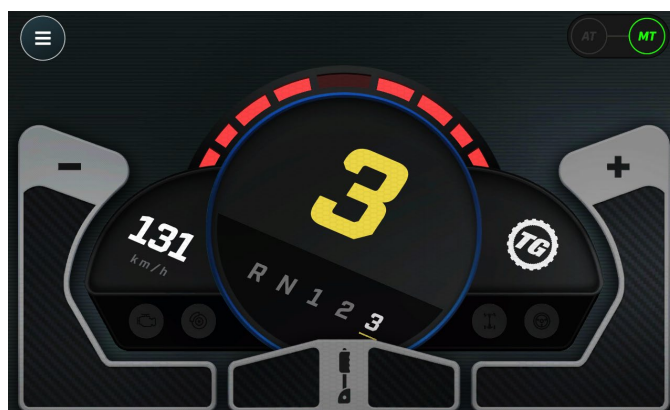
### 42109 app control

Once again, the profile for this model consists of several parts.

The main profile has steering on the left and speed plus brakes on the right. As with all profiles, the first time you use a set there is a simple tutorial to show you how to use it.



The second profile controls a racecar cockpit simulation, with pedals for speed and breaks and it uses the gyro sensor of your smart device to control the direction of the car: you need to tilt your smart device left or right to make the car turn in the desired direction.





## Conclusions

So far there are 3 CONTROL+ models and each model has its strengths and weaknesses. The 42100 Liebherr R 9800 is by far the most complete (and complex) model, but it is also quite expensive. 42109 is the cheapest option, and may be the most appealing to the youngest public. The model itself is not particularly inspiring, but it does what is expected of it and the app provides good play value. 42099 is somewhere in the middle and, in my opinion, combines the best of both: it has great play value, is not overly simple and fun to play with.

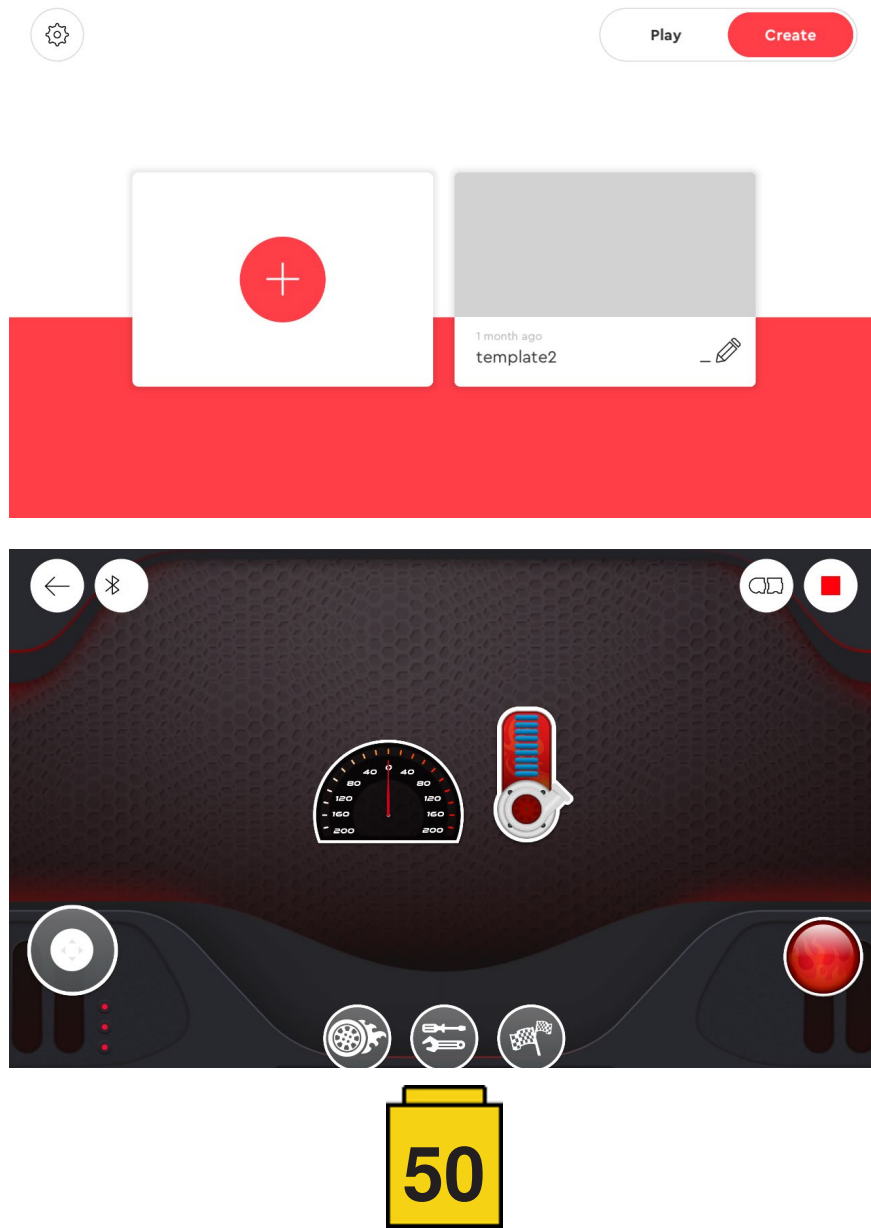
All three models have the same basic shortcomings.

- There is no B-model for any of the sets. This in itself is slightly off-putting since traditionally (almost) all Technic sets come with a second model meaning you get two builds for the price of one. Considering the comparatively high price of these models a secondary model would have been a great option.
- The control profiles are not flexible. This means that connecting a single motor to the wrong port will cause an error. In the best case functions will be inverted. In the worst case the app will refuse to connect without providing any feedback as to why. Unless everything is connected as expected the app will refuse to connect to the hub.
- This lack of flexibility also means that even if there are unused ports on the hub, these cannot be used for additional functions. Simply connecting a PoweredUp LED light means the app will no longer connect.

Fortunately there is a way around those last two obstacles. The Powered Up app now also connects to the CONTROL+ hub and in theory you can create your own profiles control creations. In practice things are not quite as simple. It is no trivial task to program any of the templates in the Powered Up app to do something as seemingly simple as control the 42109 rally Car. Hopefully the Powered Up team will provide some mode guidance and template to overcome this serious hurdle.

For now CONTROL+ is a very powerful system but the sets are hard to wield outside the dedicated app. Fortunately there are several 3rd party fan solutions (like BrickController2 or PU Tools) that offer a simple solution, but LEGO® really needs to up it's (PoweredUp) game to change these CONTROL+ sets from "build this RC model" to "a toolbox for creating your own RC models with CONTROL+ technology."

#



# Sets Second Semester 2019

*text by lluisgib*

*images by lluisgib and LEGO® System A/S*

Although we are a little late, since we are in 2020, I think it is worth highlighting some of the sets from the second half of 2019 that have most caught my attention. They are sets that, either because of the novelty or the construction techniques, stand out from the rest.

## 31097 - Townhouse Pet Shop & Café

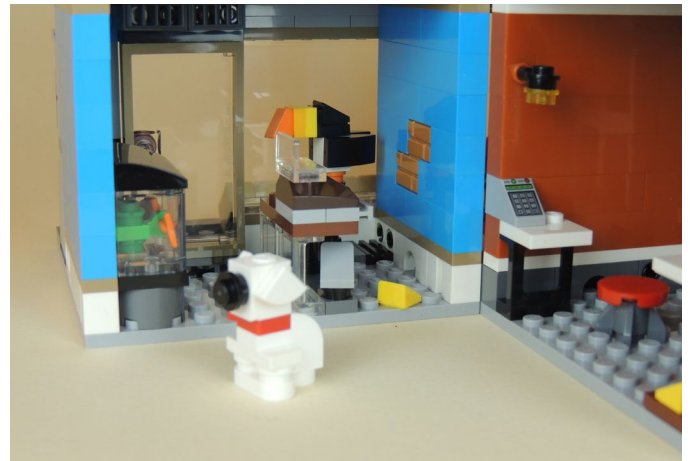
The CREATOR line has definitely become a complement to CITY in terms of buildings other than police stations or airports. In recent years we have found everything, bakeries, toy shops, homes ... In 2019 we got a beautiful cafe and a pet shop, with homes on top.



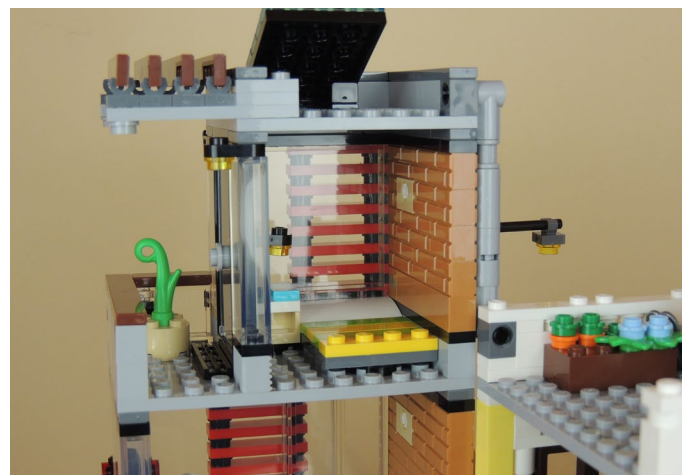
As you can see in the following picture, the assembled set is very complete. Apart from the construction itself, there are many decorative elements, for example the coffee cup on the facade, shared drains between the 2 buildings, cornices and even a traffic light!



The pet shop, although small, reproduces a fish tank, the counter, a pedestal with a toucan, a mouse with a piece of cheese and a dog, all in 7x10 studs.

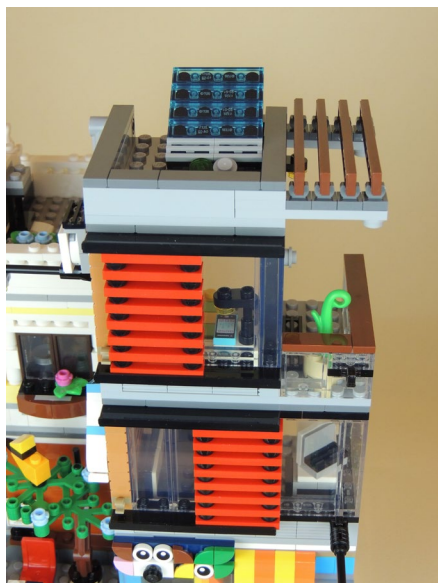


Upstairs is a two-story apartment. Downstairs there is the living room with a sofa and a TV. Upstairs there is the bedroom and a small terrace with a plant.

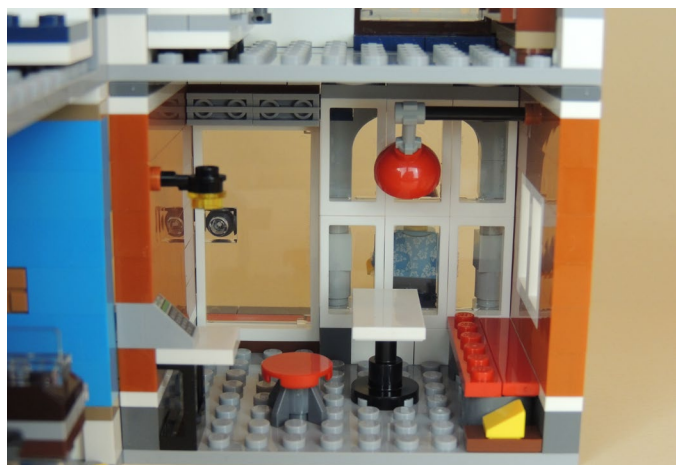




This building is of a modern design, with shutters that move laterally on both floors, and a pergola with a very interesting construction technique.



The other building, with a more classical design, reproduces a small cafeteria, which barely has a table, a bench, a stool and the cash register. Maybe I miss a coffee machine.



The top floor is a kitchen. We can assume it corresponds to the cafeteria. In this case there are more details, like the cooker with oven, the tap to wash the dishes and a piece of furniture. There is also a door to go out to the balcony.



The pet shop sign is made in a mosaic style, and reminds me of the new LEGO® Dots concept that was recently announced.



The cafeteria has a terrace on the corner between the two buildings. Here we can admire the sign of the cafeteria and a beautiful tree made of pieces.



Finally the facade of the cafeteria, as I said before, is more classic. There are columns, wall lights and a cornice that begins to resemble the level of detail of the modular buildings.



## 60233 - Donut Shop Opening

The opening of the Donut shop is a nice playset that includes several elements that perfectly complement a city, and that moves away from the “services” part (police and firemen leasing, etc...).



The element around which the set revolves is a huge Donut (suspiciously reminiscent of the Simpsons).

A truck transports the Donut to the store that is going to be inaugurated and that offers a lot of sweets, among them the aforementioned Donuts. A truck with an orange trailer is available for this transport.

I have to admit that designers always find new designs for the vehicles, and the front of this truck is no exception. The front is nice and makes good use of new parts like the triangular tiles. The trailer does not have much to offer. It has the crane that can lift the giant Donut and a receptacle to fix it.



Once the Donut is placed on top of the shop, it looks impressive. But although it is the most striking element of the construction, I want to highlight the use of a Technic wheel arch to make the decoration of the shop. It is a very clever use of this piece. There is also an ATM on the side. The design differs from what we have seen so far and is very up to date.



The interior of the shop has everything necessary for the occasion. A display fridge for the sweets, a coffee machine, a poster with the prices and a table with a couple of chairs to sit down to eat.

The lever you see in the photo is used to make the Donut roll out and give more play to the set.



The other store on the set is a toy store. In the past we have seen a LEGO® Store. In this case it's a generic toy store.

The design of the building is much simpler than the doughnut shop, but with brighter colors as befits a toy shop.

Two big balloons on the roof break the square silhouette of the store.



The interior is quite austere. It has the window with the toys, which I have to say are quite varied. And a cash register. Maybe a little more interior elements (a shelf on the right side, for example), would have helped.





The set also contains three more vehicles. Probably the most beautiful one is the bicycle-car as a “food truck”. The bicycle part is new from 2019 and appears in this set and in the Battle pack of carnival figures. The bicycle pulls a cart with muffins, cookies and coffee. Great for when you’re walking down the street and you’re a little hungry...



A taxi is always interesting because its design allows us to place two figures inside. In this case there is no great innovation in the design of the vehicle but it fulfills its function.



The last vehicle is a mobile TV unit. It is a 6-studded TV6+ van with a supersized American minivan design. Outside, the front grill, the large satellite dish on the roof and the stickers with the name of the TV channel stand out.



Inside there is a complete TV studio to do a live broadcast of the placement of the Donut on the roof of the shop :)



## 60227 - Lunar Space Station

Within the sub-theme Space of CITY 2019, I want to highlight 2 sets that I specially liked. The first one is this beautiful space station. Like the ISS, it is a space station built from modules, to which a ship can be attached and which is powered by solar panels.



You can see that the Space Station is made up of three modules, two of the same size and a slightly larger third one. The three modules are connected to a central distribution frame that also holds the solar panel structure.

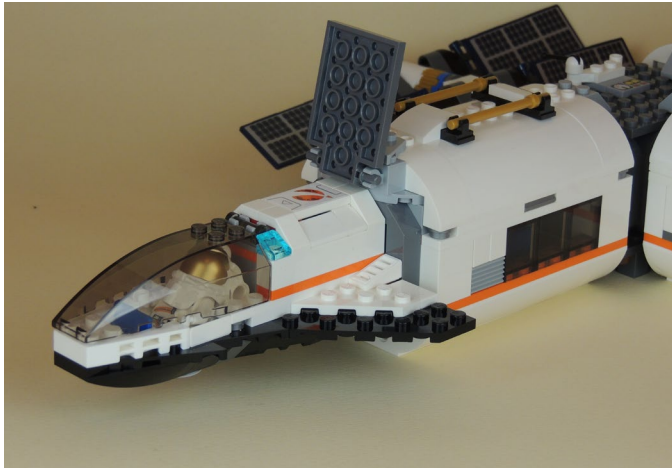




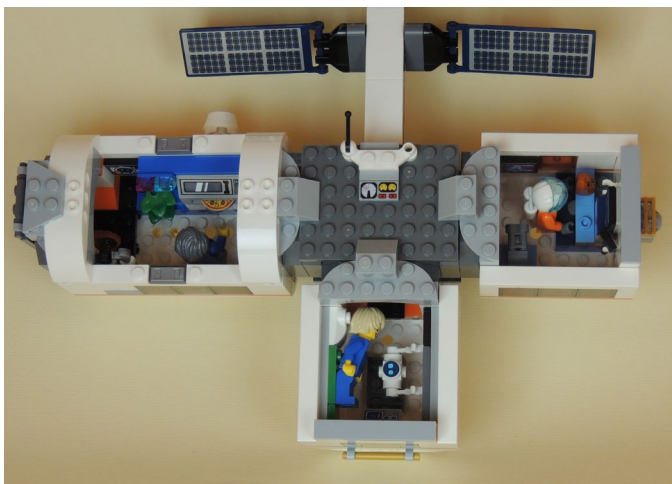
Note that the longest module has a hatch, which has 2 functions: docking of a supply ship, and allowing the astronauts to go on a space walk.



The set comes with a small space ship. It only allows one astronaut inside and there is a small supply receptacle. With the rest of the sets in the sub theme, you can complement this functionality.



Each of the three modules has a different function. The longest module has the kitchen, a couple of plants and an area with tools for the repair of the station or the arriving ships. The central module is the astronauts' quarters. It has a horizontal bed, computers to communicate with the central station and a TV for leisure time. The third module is a laboratory where the moonstones are analysed. This module has a luminous brick that illuminates the trans-clear part of the rocks.



This set adds an interesting element to space sets, as I don't remember there being a space station on the CITY theme, and it gives a destination to the large number of rockets and ships we have.

## 60230 - People Pack - Space Research and Development

Normally I wouldn't pay special attention to a People Pack, but in this case it has a novelty compared to other similar sets: Humor



There are a few jokes in this set that are worth mentioning. Perhaps the funniest one is the interview vignette. A journalist and a cameraman are interviewing an astronaut. A fellow astronaut stands behind her with an alien head to scare her off. The face of the astronaut making the joke is priceless...

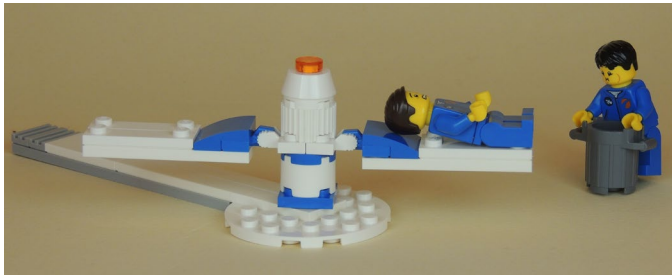


Training always requires motivation. And what better motivation than a Pizza. This astronaut's trainer puts a pizza in front of the treadmill to see if she can get it...





The centrifuge is one of the most feared by astronauts. After the test some of them vomit...



Finally, it is curious to see how a robot is repaired with a blowtorch in a space development centre. High-tech...



## Conclusions

You know my weakness for CITY sets, as they are my favorite. I know about the constant AFOL complaints against police and firefighter sets. But, luckily, in the second semester we always find nice surprises that make our complaints a little less intense.

The sets we've been analyzing are the reason I haven't left CITY. And I hope they get better and better every year.

Besides, CREATOR perfectly complements our cities with unique buildings, which in a way are already another sub-theme of CITY.

Although it is not the purpose of this review, there is another set that I liked very much, and that I want to build. It is 60203 - Ski Resort. There has been something similar in Friends, but in CITY it is another nice novelty.



We would like to thank LEGO® SYSTEMS A/S for providing the sets for analysis. The views expressed in this article are solely mine.

#



## THE MICRO LORD OF THE RINGS

HispaBrick Magazine®: Name?

BenBuildsLEGO®.  
(<https://www.instagram.com/benbuildsLEGO/>)

HBM: Nationality?

BBL: U.S.A.

HBM: How did you get started with LEGO® bricks?

BBL: The original Star Wars sets back in 1999 got me hooked!



*The Lord of the Rings: The Two Towers Skyline (September 2019)*

HispaBrick Magazine®: Name?

Koen Zwanenburg. (A.K.A. Swan Dutchman).  
(<http://www.flickr.com/photos/swandutchman/>)

HBM: Nationality?

KZ: The Netherlands.

HBM: How did you get started with LEGO® bricks?

KZ: As a kid I played a lot with LEGO® until I lost interest when I turned 12 years old. I sold all my LEGO® (which I still regret) and plunged into the 'Dark Ages'. After I graduated LEGO® caught my attention again with set 4195 Queen Anne's Revenge of the Pirates of the Caribbean. I thought a big ship like this would look great as a display piece on my bookcase. While building the ship I was surprised to see all these new colors and shapes which got me even more enthusiastic. As a result I purchased the rest of the Pirates sets and soon bought a second-hand party of LEGO®. That's when I started building MOCs. LEGO® is just a great way to vent my creativity.



*Minas Tirith (June 2018)*



HispaBrick Magazine®: Name?

Isaac Snyder (A.K.A. -soccerkid6).  
([www.flickr.com/photos/isaacsnyder/](http://www.flickr.com/photos/isaacsnyder/))

HBM: Nationality?

IS: U.S.A.

HBM: How did you get started with LEGO® bricks?

IS: I come from a large family, and my older brothers played with LEGO® a fair bit growing up. Their LEGO® collection was passed down to me and my other brothers, and we played a lot making our creations as kids. In 2011 I was looking up castles online and found the website [classic-castle.com](http://classic-castle.com). The amazing fan models showcased there inspired me, and ever since I've been actively involved with the online LEGO® community and making original models.



Rivendell (August 2017)



The Fellowship of the Ring (December 2019)

HispaBrick Magazine®: Name?

Simon Hundsbichler.  
(<https://www.flickr.com/photos/138986803@N03/>)

HBM: Nationality?

SH: Austria.

HBM: How did you get started with LEGO® bricks?

SH: My very favorite book as a Teenager was without doubt The

Lord of The Rings by J.R.R. Tolkien. I didn't see the movies, nevertheless I wanted the story come to life in some form of shape. So I started recreating some scenes in with LEGO® bricks...

At first it was all about the story and not about the bricks, but over time, as I build one scene after the other, I slowly started to find joy in the building process itself. I disassembled everything in my collection and found out that I actually did have a ton of bricks to build whatever I want. Years later – building in all different genres and themes – I finally found back to Lord of the Rings and made this creation.

HispaBrick Magazine®: Name?

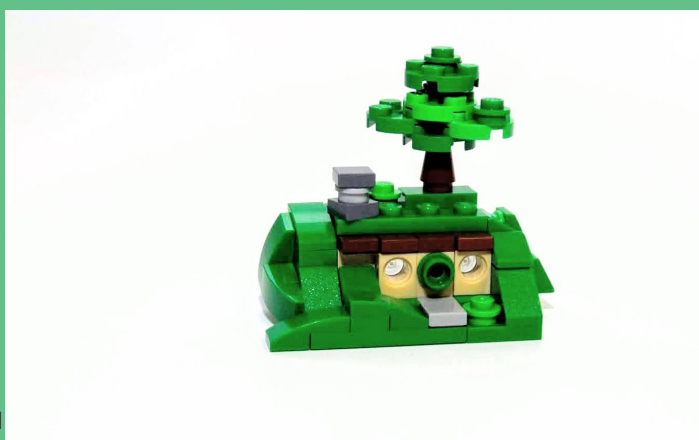
Nathaniel Stoner (A.K.A. NS Brick Designs).  
(<https://www.flickr.com/photos/127632387@N03/>)

HBM: Nationality?

NS: U.S.A.

HBM: How did you get started with LEGO® bricks?

NS: I'm an AFOL from Pennsylvania (United States of America), and I've been building for 5 years now. When I was young, I actually didn't like LEGO® at all. It wasn't until I was in my teenager years that I dumped out my old collection of bricks and started creating!



Micro Bag End (2018)

This model that the folks at HispaBrick were kind enough to share with you is

"Micro Bag End," or a microscale recreation of Bilbo / Frodo Baggins' humble Hobbit hole from the Lord of the Rings. I built this creation back in 2018, actually at the request of Brick Fanatics for their annual advent calendar.

**HispaBrick Magazine®:** Name?

**Patrick Bohn (A.K.A. -Balbo-).**  
([www.flickr.com/photos/-balbo-/](http://www.flickr.com/photos/-balbo-/))

**HBM:** Nationality?

**PB:** Austria.

**HBM:** How did you get started with LEGO® bricks?

**PB:** The release of the LEGO® Lord of the Rings line in 2012 was the main reason why I started buying LEGO® sets again after my dark ages. In the beginning I only wanted to collect the sets and minifigures, but I wasn't interested in building my own creations. Everything changed 2014, when it became clear that LEGO® won't release more Lord of the Rings and Hobbit sets. Due to the fact that so many locations from that movie/book didn't become a set, I decided to build that them with my own bricks.



*Hobbiton (August 2017)*



*Mordor (August 2017)*

**HispaBrick Magazine®:** Name?

**Milan Sekiz.**  
([www.flickr.com/photos/128819970@N06/](http://www.flickr.com/photos/128819970@N06/))

**HBM:** Nationality?

**MS:** Serbia.

**HBM:** How did you get started with LEGO® bricks?

**MS:** I started with LEGO® by trying to entertain my 3 guest friends because they all wanted to do different thing. So I found my old LEGO® collection (stored in one shoe box).

We build things for few hours, friends left and I just simply never put LEGO® back in the box. Instead I went online to look for some used bricks to buy because new one are really expensive for us here.

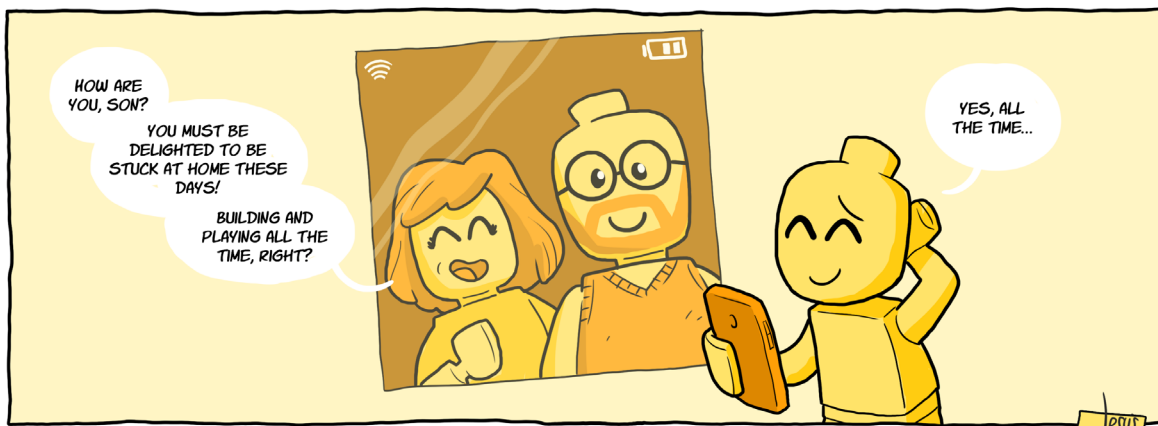
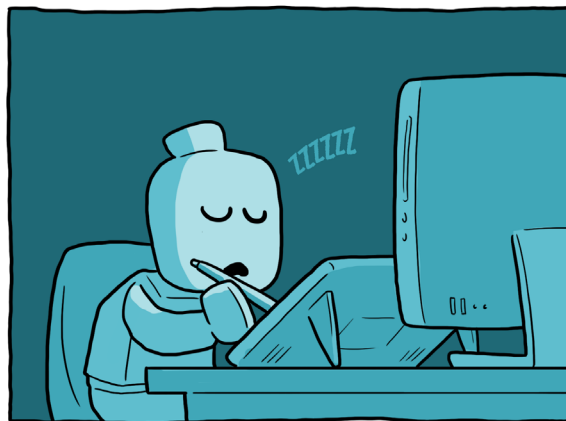
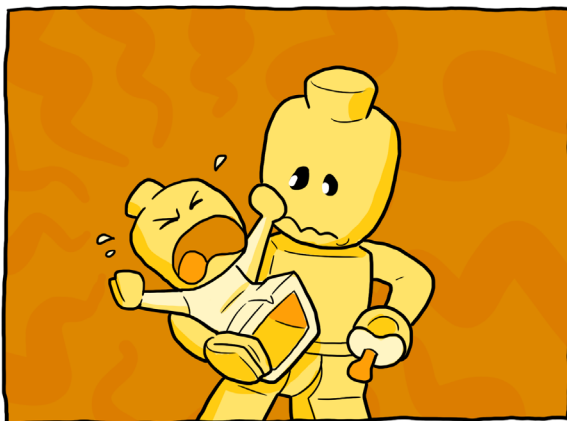
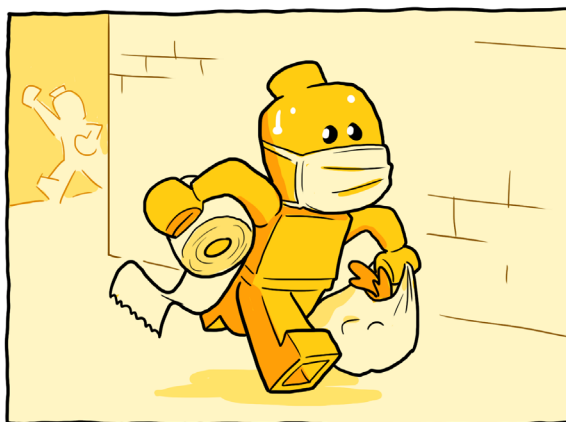
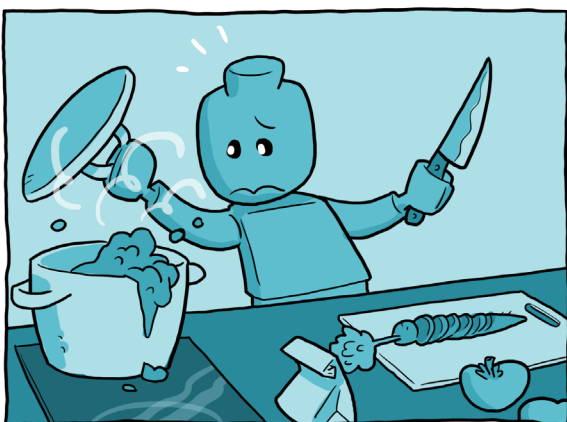
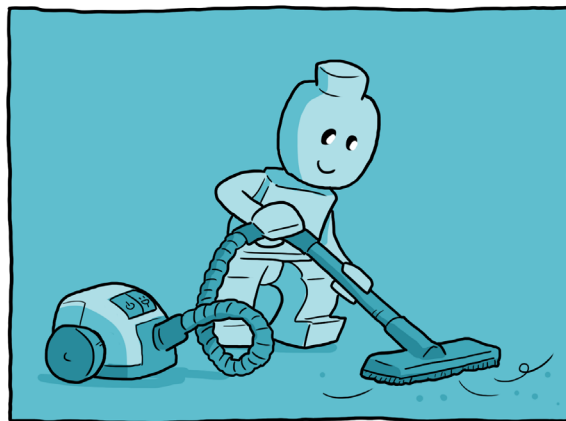
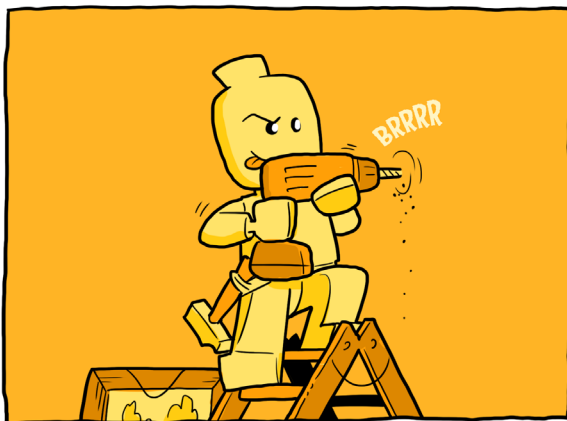


## Benny's Corner by Luigi Priori

“Love you, Mum”



# Desmontados by Arqu medes





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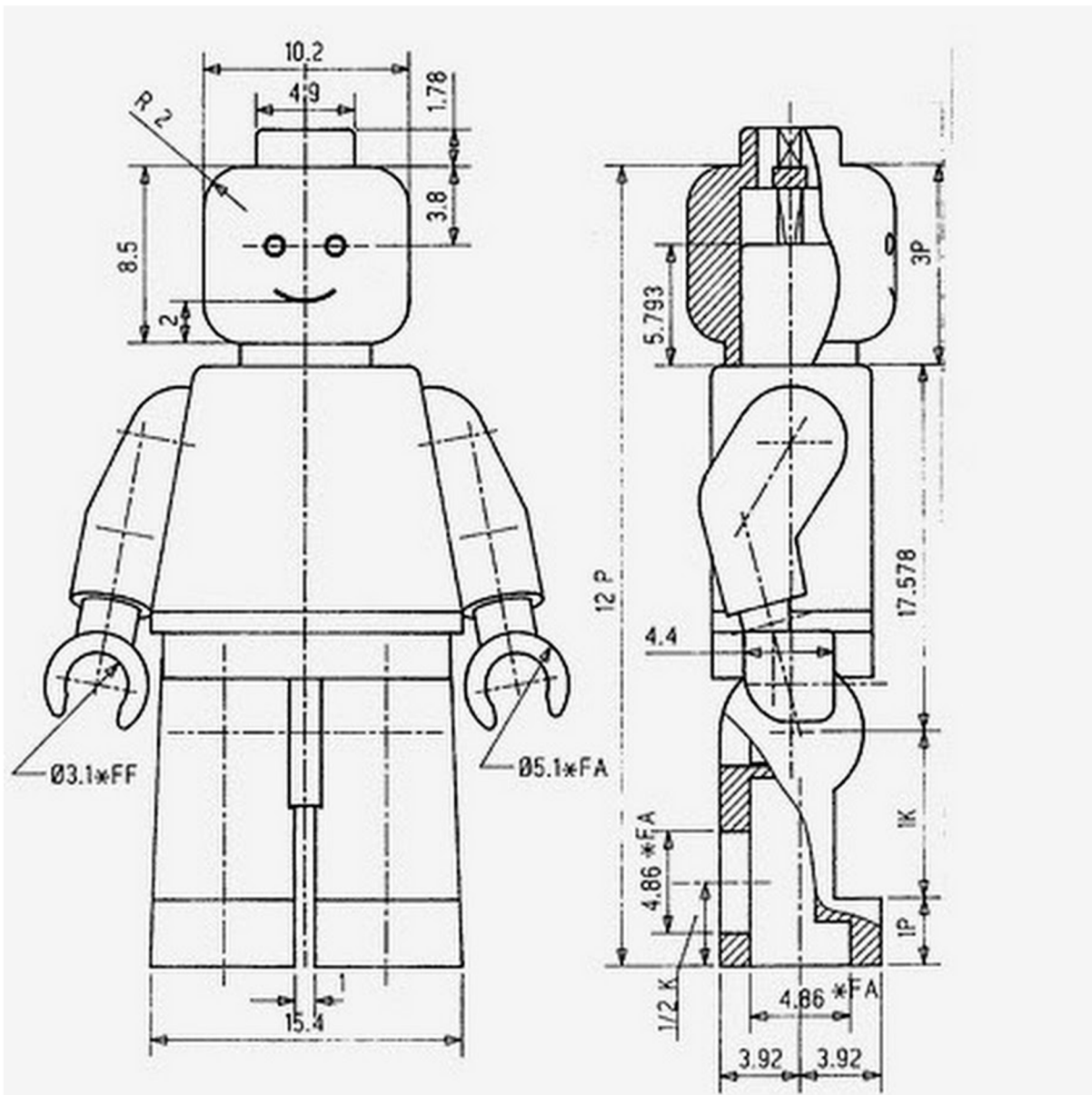
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